# BEING

## A STUDY IN ONTOLOGY

PETER VAN INWAGEN

OXFORD

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UNIVERSITY PRESS

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*For Lisette*

Enemigo de Platón, empero más enemigo de lo falso.

> *Inimicus Plato, sed magis inimica falsitas.*
>
> —*Tarski*

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# Preface

No one can deny that W. V. Quine wrote many splendidly quotable (and in consequence much-quoted) sentences. Among them is the first sentence of his preface to *Set Theory and Its Logic*: ‘A preface is not, in my book, an introduction.’[1] I refuse, however, to be simply one more philosopher who has quoted this sentence. I will not quote it. I will *borrow* it: A preface is not, in my book, an introduction.

One of the many introductions that this Preface is not—the Introduction to *this* book—follows it.

The intellectual context of *Being: A Study in Ontology* is this: it is an historical document, a book of the nineties of the last century. I began work on *Being* in the early eighties. The chapter headings of the original plan for the book were much the same as those of the book that is in your hands (or those of the book one page of which is on a screen before you), with two exceptions: Chapter VI was added in response to a suggestion made by a reader for O.U.P., and there was originally to be a chapter called “Being and Materiality.” I had a year’s research leave (thanks to the generosity of the National Endowment for the Humanities) and eagerly started work on the book. I began with the chapter “Being and Materiality” because, at the time, that was the area in which the ideas were coming. But that chapter took on a life of its own and eventually became a book—*Material Beings*. *Material Beings* (like *An Essay on Free Will* before it) took seven or eight years to write. But I was able to do quite a lot of work (here and there, now and then) on *Being* even when the main focus of my attention was on *Material Beings*. I submitted an incomplete draft of *Being* to the Oxford University Press and in 1994 it was—conditionally, of course—accepted for publication. I took it for granted that—given the time it had taken to write *An Essay on Free Will* and *Material Beings*—I should finish the book in a few years, certainly before the end of the century.

It was not to be. The pressure of other work—I was in those days the recipient of a seemingly unending series of invitations to write papers on topics I badly wanted to write papers on—caused me again and again to put off work on *Being*, each time “for a few months.” I found myself unable to do any further work on the book if I could not devote my undivided attention to it for some considerable period of time, and no such considerable period of time ever presented itself.

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[1] It has, for example, been quoted by John P. Burgess and Gideon Rosen in the preface to their *A Subject with No Object: Strategies for Nominalistic Interpretation of Mathematics* (Oxford: at the Clarendon Press, 1996), p. *v*.

Eventually my manuscript became obsolete, or at least I eventually began to think of it as obsolete. In 1994, no one to speak of was writing on the topic that today is called meta-ontology,[2] but, all of a sudden, at some point early in this century, it seemed that everyone was. (In 2008, Ross Cameron published a paper that contained the soon-to-be-much-quoted sentence 'Metaontology is the new black'.) And my manuscript addressed none of that work. A cloud of metaphysicians were now writing about fundamentality and grounding, Aristotelianism vs Quineanism, easy ontology, neo-Carnapianism, Ontologese, modes of being, . . . . And none of these topics was so much as alluded to in the draft manuscript of *Being*—for, of course, when I was writing the various chapters that draft comprised, I had never heard of any of them.

By the time the new century had got well under way, whenever I happened to be in Oxford, Peter Momtchiloff, the Senior Commissioning Editor for Philosophy at O.U.P., would give me lunch, during which meal he would delicately press me for information about how work on *Being* was coming along. Unless my memory deceives me, I was on every such occasion honest enough to tell him that it was not coming along at all. During one of the more recent of these luncheons, I laid out in some detail the problem I mentioned in the preceding paragraph, and Peter suggested that I publish the book as an historical document, a creature of its time—and that I refer readers to my more recent papers for my current thoughts on ontology and meta-ontology.

And this I have done. I have, I confess, deeply revised the "nineties manuscript" of *Being* in preparation for the publication of this book. And I have written a lot of wholly new material—for the manuscript that had been submitted to Oxford in the nineties was, as I have said, incomplete. But the revisions are revisions that might have been made, and the added material is material that might have been composed, before meta-ontology became the new black.[3] For my current thinking about the matters addressed in this book,[4] the reader is directed to my collections *Existence: Essays in ontology* (Cambridge: Cambridge University Press, 2014) and *The Abstract and the Concrete*, which will be published by Oxford University

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[2] A term I invented (or re-invented). "Meta-ontology" was the title of a paper I published in 1998, an adaptation of the then-current draft of the first chapter of *Being*. Heidegger had coined the word '*Metontologie*' in the late twenties, but I did not know of Heidegger's coinage till I was informed of it by Dr Franca d'Agostini early in the present century. Heidegger's word is a better formation than mine, owing to the fact that 'μετά' loses its terminal vowel when prefixed to a word that begins with a vowel. I have, however, resisted adopting the word 'metontology', owing to worries about whether very many anglophone philosophers would recognize their old friend 'meta-' in its abbreviated guise. I do, however, insist on writing the word with a hyphen between the two vowels: 'meta-ontology'. (For a discussion of Heidegger's use of '*Metontologie*', see Steven Galt Crowell, "Metaphysics, Metontology, and the End of *Being and Time*," *Philosophy and Phenomenological Research* LX (2000), pp. 307–331.)

[3] I confess that this is not *quite* true. Toward the end of the final chapter there is a brief mention of "ontological grounding."

[4] The essays in my 2001 Cambridge collection, *Ontology, Identity, and Modality*, are all solidly "pre-new black."

Press. Almost nothing in these later essays contradicts anything in the present book. The rare inconsistencies between the later essays and the material in this book pertain to minor technical matters.

A reader for the Oxford University Press made two very useful suggestions. Chapter VI is the result of one of them, and the detailed Summary of the Text following the table of contents is the result of the other. The Summary is not meant to be a mechanically accurate outline of the contents of the book. In some places it verges on the impressionistic. But that is consistent with its sole purpose, which is to enable readers who have had to put the book down for a week or a month to find their way back into the argument. (The reviewer assured me that he or she—who *had* had occasionally to put the book down for a week or a month—would have found such a summary very useful.)

Chapter IV contains some comments I wrote, at Derek Parfit's request, on his defense of possibilism in a draft of Volume II of *On What Matters* (Appendix J). I am grateful to Janet Radcliffe-Richards and Jeff McMahan, Parfit's literary executors, for permission to publish what amounts to several pages of the draft of Appendix J—material that sometimes differs from the corresponding material in Appendix J in the published book. I thank Uwe Meixner and Christopher Menzel for extremely useful correspondence on possibilism and related matters.

## A Note on the Epigraph

Professor Geach has written, "...Tarski once said, *inimicus Plato, sed magis inimica falsitas.*"[5] He gave no citation. I have been unable to verify this statement.

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[5] *Logic Matters* (Oxford: Basil Blackwell, 1972), p. 116.

# Introduction

This book presents a meta-ontology and an ontology. An ontology is a detailed and systematic answer to "the ontological question": 'What is there?' A meta-ontology is a reflective answer to the question, 'What are we asking when we ask the ontological question and how shall we go about trying to answer it?' Or, to use the two words as mass terms: in ontology, we ask and attempt to answer the ontological question; in meta-ontology, we attempt to understand what we are doing when we do ontology.[6] Chapters I and V are devoted to meta-ontology, Chapter I to the presentation of a meta-ontology, and Chapter V to consideration of its rivals. Chapters II, III, and IV are applications of the meta-ontology presented in Chapter I to questions about what there is: Are there things that do not exist?; Are there abstract objects?; Are there objects of the sort that seem to be presupposed in much of our modal reasoning: unrealized possibilities, possible worlds, possible fat men in the doorway? (Chapter VI was not a part of the original plan of the book. It is based on a suggestion of a reader for the Oxford University Press. In Chapter VI, I present a single, unified framework within which the positions defended in the earlier chapters can be placed.)

The meta-ontology presented in Chapters I and V is, so to speak, deeply Quinean. This is no accident. I did not set out to develop a meta-ontology and later discover that the one I developed happened to be identical with Quine's. My meta-ontology is Quine's meta-ontology (or something very much like it) because I have read what Quine has to say on the subject and have been convinced by it. The ontology presented in Chapters II, III, IV, and VI is, by contrast, deeply anti-Quinean. (It is, for example, friendly to propositions and attributes and modality *de re*, although it agrees with Quine's views in the matter of non-existent things.) This is an accident. I did not set out to refute or disagree with Quine. I have simply

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[6] "Then why is your subtitle not 'A study in ontology and meta-ontology'"? Well, too long, for one thing, and too busy. But perhaps there is a lesson to be learned from 'metaphilosophy'. In one sense of 'philosophy', in metaphilosophy we attempt to understand what we are doing when we do "philosophy"—and metaphilosophy is thus something outside philosophy. And yet metaphilosophy is a part of philosophy. (There is a journal called *Metaphilosophy*. I can, with a little effort, imagine a philosopher who denied that *Metaphilosophy* was a philosophical journal. By no stretch of the imagination can I imagine a librarian who did.) I would explain this apparent inconsistency by saying that the word 'philosophy' has wider and narrower senses—in the wider sense it includes metaphilosophy, and, in the narrower sense of 'philosophy', metaphilosophy is outside philosophy and examines philosophy. And, I would say, 'ontology' has a wide sense and a narrow sense. In the narrower sense, Chapters II, III, and IV of this book concern ontology, and Chapters I and V are about meta-ontology, the discipline that *studies* the discipline I am engaged in Chapters II, III, and IV. In the wider sense of 'ontology' (the sense the word has in the title of the book), all five chapters are about "ontology."

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come to different ontological conclusions from his, despite the fact that I have thought about ontological problems in the way (if I may so speak of my relationship to a philosopher who has been my teacher only through the written word) he has taught me to think about ontological problems.

I will try to give some sense of what I mean by saying that the meta-ontology I present in this book is "deeply Quinean." But I do not mean to anticipate the detailed and technical discussion of meta-ontological questions that comprises Chapters I and V. I will simply comment on two quotations that represent meta-ontological views antithetical to Quine's, and on one quotation that misrepresents Quine's views. The first is from Arthur Prior's *Objects of Thought*:

> [Quine's difficulty with such quantifications as 'Paul believes something that Elmer does not'] seems to me to be quite unnecessary; like many other difficulties of his, it arises only through his insistence that all quantification must govern variable names. I see no reason why we should not—... following Ramsey—quantify our sentential variables and concoct such complexes as 'For some p, Paul believes that p and Elmer does not believe that p', without thereby being 'ontologically committed' to the view that there are objects which sentences name. (I doubt whether any dogma, even of empiricism, has ever been quite so muddling as the dogma that to be is to be a value of a bound variable.)[7]

The burden—or a good sixty percent of the burden—of Chapters I and V could be summed up by saying that the ideas on display in this passage are radically defective.[8] In this passage—*I* say—, a philosopher accuses another philosopher of being wrong-headed and muddled on just those points on which he himself is wrong-headed and muddled and his target exceptionally insightful and clear-minded. I will be particularly concerned to commend Quine for "his insistence that all quantification must govern variable names" (that is, must govern variables that occupy nominal positions). More exactly, I will commend Quine for his insistence that there can be no such thing as a variable that does not occupy a nominal position—for it's not as if Quine conceded that there *were*, for example, sentential variables but held that, for some reason, quantification couldn't govern them.

In my view (and Quine's), "complexes" such as 'For some *p*, Paul believes that *p* and Elmer does not believe that *p*' are concocted indeed—concocted as nineteenth-century patent medicines were concocted. All the ink that has been spilled in defense of such concoctions has, in my view, produced no more real content than can be found on the fancy labels on the bottles in which those medicines were dispensed. I mean this accusation to apply not only to sentential variables but to "predicative variables" ('For some *F*, *F* Paul and it is not the case that *F* Elmer') and to all other sorts of variables that are supposed to occupy non-nominal positions. If, for example, some philosopher has concocted "complexes" containing "sentential-connective variables" ('For some *C*, Paul is taller than Elmer *C* Elmer is shorter than Paul') my accusation applies to that philosopher as well.

---

[7] A. N. Prior, P. T. Geach, and Anthony Kenny, *Objects of Thought* (Oxford: at the Clarendon Press, 1971), p. 101.

[8] See Section 3 of Chapter V.

I turn now to my second quotation. Its author is the late Ernest Gellner. (I am sorry that the first two of my targets are among the defenseless dead. If I knew of living philosophers who had said things equally suited to the polemical purposes of this Introduction, I would instead quote them.[9]) In an article written in the mid-seventies, Gellner gave a very nice description of Quine's meta-ontology, and, having paused briefly to identify himself as a nominalist, went on to say

> The dreadful thing is, I haven't even tried to be a serious, card-carrying nominalist. I have never tried to eliminate "quantification" over abstract objects from my discourse. I shamelessly "quantify over" abstractions *and* deny their existence! I do not try to put what I say into canonical notation, and do not care what the notation looks like if someone else does it for me, and do not feel in the very least bound by whatever ontic commitments such a translation may disclose.[10]

An example will make it clear what Gellner is being so intransigent about. Suppose he has been heard to say things like, 'There is something that Paul and Silas both believe and Elmer does not believe'. And suppose he has also been heard to say that there are no abstract objects. Suppose Miriam, who has heard him say both these things, says to him,

> Gellner, you've contradicted yourself. You've said, "There is something that Paul and Silas both believe and Elmer does not believe. But you also say that there are no abstract objects. And if there is something that Paul and Silas both believe, this "something" must be an abstract object. ('Proposition' is the word customarily used for abstract objects of this sort, but my point doesn't depend on what we choose to call them.)

---

[9] Robert M. Adams's *What Is, and What Is in Itself* (Oxford: Oxford University Press, 2021) came into my hands too late to have any significant effect on the text of this book. (And it is not ruled out by my decision to publish the present book as "an historical document," for much of Adams's book does not presuppose any acquaintance with twenty-first-century meta-ontology.) And my meta-ontological disagreements with Adams are far more widespread and profound even than my meta-ontological disagreements with Prior and Gellner. It's a superb book—but I *do* want to take a take a Sharpie and place a negation sign before each sentence it contains.

[10] Ernest Gellner, "The Last Pragmatist, or the Behaviourist Platonist," *Spectacles and Predicaments: Social Theory* (Cambridge: Cambridge University Press, 1979), pp. 199–208. The quoted passage is on p. 203.

There are a number of ways Gellner—or any nominalist, anyone who denies the existence of abstract objects—might reply to Miriam's argument.

### (1) There is the Prior line

You are supposing that all quantification must be into nominal positions. You are attempting to read my sentence 'Paul and Silas believe something that Elmer does not' this way: 'For some *x*, Paul believes *x* and Silas believes *x* and Elmer does not believe *x*'. I agree that it is hard to see how there could be anything acceptable to a nominalist like myself that satisfied the open sentence 'Paul believes *x* and Silas believes *x* and Elmer does not believe *x*'. But don't read my sentence that way. Read it this way: 'For some *p*, Paul believes that *p* and Silas believes that *p* and Elmer does not believe that *p*'. (Note the 'that's: '*p*' is a sentential, not a nominal, variable.) Without going into the question of the sort of semantical analysis I would provide for sentential quantification, I will say for the record that the 'For some *p*' sentence can be true even if nothing satisfies 'Paul believes *x* and Silas believes *x* and Elmer does not believe *x*'—as, in my view, nothing does.

### (2) There is the "paraphrastic" reply

I agree that what I have said has the appearance of a contradiction. But the appearance is superficial, and—I'm sure you will agree—an apparent contradiction need not be a real contradiction. (A Copernican might utter both these sentences: 'It was cooler in the garden after the sun had moved behind the elms' and 'The sun does not move'—an apparent, not a real, contradiction.) Don't think I'm going to cheat like Prior. Quantification is quantification—that is, there's only one kind. But I will show you how to read my sentence 'Paul and Silas believe something that Elmer does not'—and how to account for the fact that it follows logically from what I assert when I utter this sentence both that there is something that Paul and Silas both believe, and there is something that Elmer doesn't believe that other people do—and I will do these things in a way that doesn't violate my nominalistic scruples. That is, I'll show you how to account for *all* the logical relations that hold among *all* the general sentences (sentences whose grammatical structure turns on the presence in them of 'all' and 'some') I accept that concern what people believe (accept, assent to, assert, think, deny...). In doing these things, moreover, I'll make use of the only kind of variables there are, nominal variables. And, I promise you, my effort will *not* have the following consequence: for some one-place open sentence *F*, the existential generalization on *F* is logically deducible from the sentences I endorse, and *F* can be satisfied only by objects unacceptable to a nominalist. [The nominalist then proceeds to do what has been promised. I can't go on with (2) because I don't know how to do it.]

### (3) There is the response of faith

I agree that what I have said has the appearance of a contradiction. I'm convinced, however, that this contradiction is apparent, not real. I'm afraid I don't have any way to show this, but nominalism seems obviously right, and it's evident that people often say true things by uttering sentences like 'Paul and Silas believe something that Elmer does not believe'. So I'm inclined to think that the two things I said are consistent just because I'm inclined to think they're both true. (And it does seem awfully odd to me to suppose that by making a simple, everyday assertion about the beliefs of my acquaintances I'm tacitly endorsing a metaphysical theory.) As to how the contradiction is to be resolved, who knows—maybe Prior was right about sentential quantification; or maybe someone can do what that fellow in (2) above claimed to be able to do. (Or if no one can, maybe that's just because no one is clever enough or no one has yet hit on the right idea; it is certainly not implausible to think that there are soluble problems that no one can figure out the solution to—or has yet been able to figure out the solution to.) And why should *I* expect to be able to?—I'm not a logician or a metaphysician. I'm more a political philosopher, really, though I once did some work on Locke's theory of perception. All this ontological stuff is not really my line.

I have said something about why I reject the first reply. The second reply—well, it's nice work if you can get it, but I don't think you can get it, not even if you try very hard indeed. (We shall look at some attempts to get it in Chapter III.) I don't really have any hard objection to the third—provided the philosopher who makes this reply means what he says about his amateur status in ontology. But what would Gellner's reply be? I think none of these, although the question is hard to answer because Gellner never considered anything like Miriam's argument. Miriam's argument is formulated in "ordinary language," or something very close to it, and Gellner assumes that Quine's arguments essentially involve what Quine calls "canonical notation." This assumption is explicit in what Gellner says immediately after the paragraph I have quoted:

> Why am I so totally lacking in logical [shame]? Why am I so frivolously lighthearted? The answer is of course that I believe neither in the existence of any canonical notation, nor in the possibility of reading ontic commitments from it. In this I am not eccentric but, on the contrary, a follower of local conventional wisdom. Another aspect of that recent conventional wisdom, the idea that ordinary language itself constitutes a new kind of canonical notation, I do not accept for one moment; but the negative part, the repudiation of the pursuit of an

> invented and authoritative canonical notation, strikes me as cogent. It is Quine who is unusual, in continuing, albeit with self-conscious irony, to talk of a canonical notation with ontic import, and to suppose that one special notation will throw into relief the relationship between theory and reality.

In this passage, Gellner places far too much emphasis on Quine's talk of "canonical notation." The full phrase, let us remember, is "the canonical notation of quantification." Gellner had earlier said, "I shamelessly 'quantify over' abstractions *and* deny their existence! I do not try to put what I say into canonical notation...." Gellner is right when he says that he quantifies over abstractions, and he is no doubt telling the truth when he informs us that he never tries to put what he says into canonical notation—that is, into the canonical notation of quantification. It would seem to follow, and it does follow, that it is possible to quantify over abstractions (and dogs and neutrons as well) without using the canonical notation of quantification. (After all, we can do arithmetic without using the canonical notation of arithmetic. Alice calculated, without using any notation at all, that one had three hundred and sixty-four unbirthdays in every three-hundred-and-sixty-five-day year; Humpty Dumpty then requested that she put her calculation into the canonical notation of arithmetic.)

Quine's appeal to the canonical notation of quantification is an important aspect of his meta-ontology, but it is not central to it. What is central is quantification. The canonical notation of quantification is no more than an especially perspicuous notational device for representing quantification; it is not the *sine qua non* of quantification. One can quantify without it, and Gellner, like the rest of us, quantified all the time. Like speaking prose, quantifying is something we have all been doing for most of our lives. Quantifying, indeed, is an essential part of speaking prose—and you can't get away from it in poetry, either.[11] M. Jourdain was surprised to learn from a professor of philosophy that for more than forty years he had been speaking prose without knowing it. Gellner did not need to learn from a Harvard professor of philosophy that he had been quantifying for a comparable period: he knew it: "I shamelessly 'quantify over' abstractions." But to say, "I shamelessly 'quantify over' abstractions *and* deny their existence!" is to say, "I shamelessly affirm the existence of abstractions *and* deny their existence!". He concedes, therefore, in a general way the presence of at least apparent self-contradiction in his discourse; Miriam has pointed to a particular case. And we do not need to appeal to the notion of a canonical notation of quantification to make this point. The appeal to canonical notation has only this function in Quine's meta-ontology: the canonical notation is a sharpening of ordinary quantificational devices, and, if one both affirms and denies the existence of something, putting one's discourse into the canonical notation of quantification will invariably bring this contradiction into sharp focus—or uncover it, for it may be hidden. I conclude that Gellner's disapprobation of "an invented and authoritative canonical notation" is not to the point, and that those who both quantify over abstractions and deny their existence at least *prima facie* contradict themselves and had better have available some response to the person who points this out—even if it is only the response of faith.[12]

---

[11] For example: "*Lives* of great men all remind us/As their pages o'er we turn/Departing, not to leave behind us/Letters that we ought to burn."

My third and final quotation is from Jonathan Schaffer. I confess it is from a period later in the recent history of analytical metaphysics than the period to which the present "historical document" (see the Preface) belongs. But I am not here concerned with "fundamentality and grounding," the topic that Schaffer is about to introduce his readers to.[13] I am not concerned with the view that Schaffer will go on to oppose to "the Quinean view" but only with his statement of the Quinean view. And that statement (I maintain) is not a statement of Quine's view at all, and has no basis in anything Quine has written. And yet, or so I judge, the statement of "the Quinean view" that I am about to quote has been widely accepted and has never been challenged. (The quotation consists of two passages from Schaffer's "On What Grounds What."[14] The first passage comprises the first two sentences of the essay, and the second occurs on the second page (348) of the essay.)

> On the now dominant Quinean view, metaphysics is about what there is. Metaphysics so conceived is concerned with such questions as whether properties exist, whether meanings exist, and whether numbers exist.
>
> According to Quine, metaphysics addresses the question of "What is there?"[15] He notes that the question has a trivial answer ('everything'), but adds "there remains room for disagreement over cases."[16] Among the cases he mentions are properties, meanings, and numbers. Thus Quine sees metaphysics as addressing the question of what exists, by addressing questions such as whether properties, meanings, and numbers exist. This should be familiar.
>
> To be more precise about the Quinean view, it will prove useful to begin by distinguishing between the *task* and the *method* of metaphysics. Thus:
>
> *Quinean task*: The task of metaphysics is to say what exists

---

[12] What does it mean to "put one's discourse into the canonical notation of quantification"? This is a subtle question. Or, better, it is, in the rhetorician's sense, a complex question. I shall attempt to disentangle its complexities in Chapter I.

[13] But, as I said in the Preface, I will have just a bit to say about grounding in the last few pages of the book.

[14] In David Chalmers, David Manley, and Ryan Wasserman (eds.) *Metametaphysics: New Essays on the Foundations of Ontology* (Oxford: at the Clarendon Press, 2009), pp. 347–383.

[15] At this point, Schaffer cites the first page of Quine's "On What There Is."

[16] At this point, there is a second citation of the first page of "On What There Is."

> . . .
>
> *Quinean method*: The method of metaphysics is to extract existence commitments from our best theory.

And what supports this statement of Quine's view of metaphysics? Only the citation of the opening remarks of "On What There Is." The odd thing is, neither the word 'metaphysics' nor any word derived from 'metaphysics' ('metaphysical', 'metaphysician' . . . ) occurs in those remarks. (The first sentence of "On What There Is" is not, 'A curious thing about the metaphysical question is its simplicity'.) In fact, the word 'metaphysics' occurs only twice in "On What There Is," and both occurrences are in the same sentence (a comment on McX's argument that the universal redness must exist, since there is obviously something that red houses, red roses, and red sunsets have in common, and 'redness' is simply the name we have chosen for this "something"):

> This, I think, is characteristic of metaphysics, or at least of that part of metaphysics called ontology: one who regards a statement on this subject as true at all must regard it as trivially true.[17]

Instead of saying,

> On the now dominant Quinean view, metaphysics is about what there is. Metaphysics so conceived is concerned with such questions as whether properties exist, whether meanings exist, and whether numbers exist,

Schaffer ought therefore to have said,

> On the now dominant Quinean view, ontology is about what there is. Ontology so conceived is concerned with such questions as whether properties exist, whether meanings exist, and whether numbers exist.

Of course, that wouldn't have been a very exciting thesis. (Shaffer's position entails that "ontology so conceived" would be a very boring part of philosophy indeed, owing to the fact that the answer to questions of the form "Do *X*s exist?" is generally "Yes.") True, that not-very-exciting thesis is not beyond dispute. Some might want to apply the word 'ontology' to the study devoted to the question of the nature (or meaning or proper analysis) of being and existence—to, roughly, what I call 'meta-ontology'. But a dispute about whether we should use 'ontology' as a name for the part of philosophy that attempts to answer "the ontological question" or as a name for the part of philosophy that attempts to answer the question, 'What is being?' would be a profitless verbal dispute—on a par with a dispute about whether 'realism' should be a name the philosophical position opposed to nominalism or a name for the philosophical position opposed to idealism or a name for the philosophical position opposed to (appropriately enough) anti-realism. No, the sense in which Quine uses the word 'ontology' in the sentence quoted above is beyond criticism.[18] And if the word is used in that sense, the sentence 'Ontology is about what there is' is a tautology.

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[17] "On What There Is," in W. V. O. Quine, *From a Logical Point of View* (Cambridge, MA: Harvard University. Press, 1953), pp. 1–19. The quoted sentence occurs on p. 10.

In sum, Quine has said nothing to support the thesis that he regards metaphysics as an investigation into what there is. He has, indeed, said almost nothing about metaphysics.

These three quotations, and my animadversions upon them (as Quine might have described the above remarks) were intended to "give some sense of what I mean by saying that the meta-ontology I present in this book is 'deeply Quinean.'" For a fuller statement of these views, see Chapters I, V, and VI—and the applications of these views to various problems about what there is, particularly in Chapters II, III, and IV.

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[18] Quine uses, and, following him, most present-day analytical philosophers use, the word 'ontology' both as a mass term and as a count noun: "Quine's contributions to ontology are considerable" vs "A nominalistic ontology is an ontology that does not countenance sets or any other species of abstract objects." In the quoted sentence, 'ontology' has its "mass term" sense.

# Summary of the Text

This Summary is designed for a specific purpose, a statement of which can be found in the Preface.

*Preface* This book is in a certain sense an historical document. The story of its composition and publication.

*Introduction* This book contains a presentation and defense of a Quinean meta-ontology and applications of this meta-ontology to various questions of ontology. An introduction to the Quinean meta-ontology in the form to a discussion of two attacks on it (by Arthur Prior and Ernest Gellner). A discussion of Jonathan Schaffer's thesis that, according to Quine, "the task of metaphysics is to say what exists."

## Chapter I Being and Existence

1. 'Ontology' in the existential-phenomenological tradition vs 'ontology' in the analytical tradition. This book is solidly within the analytical tradition. Ontology and meta-ontology. The meta-ontology of this book is Quinean. The Quinean meta-ontology comprises five theses.

2. The first thesis: being is not an activity ("like breathing, only quieter"). The language of the (as yet undiscovered) Martians has no ontological vocabulary (Martian atheists say, "Everything is not God"). If there is an activity called being, the Martians can't refer to it and do not know about it. Is there something ("being") that you and I know about and the Martians don't? Is the Martian language a kind of Newspeak, designed to keep certain thoughts unthinkable? The second thesis: there is no important distinction to be made between being and existence. A challenge: "If you think there are things that do not exist, give me an example of one." The right response to your example will be either "That does too exist" or "There is no such thing as that." The absurdity of "It's wrong to say that there is no fountain of youth. (Ponce was searching for *something*—and what he was searching for was the fountain of youth. Of course it doesn't exist and never did.)"

The absurdity of '"Exist" is applied mainly to physical objects, but "there is" is more general' is almost as great: witness 'conditions for a durable agreement do not yet exist'.

The third thesis: being is (and hence existence is) univocal. To say that there are *X*s or that *X*s exist is to say that the number of *X*s is greater than 0; or perhaps to say that not everything is not an *X*. In either case, both statements are univocal because ‘the number of ——s is greater than 0’ and ‘not everything is not a(n)’ are both univocal. Ryle’s arguments for the equivocacy of existence are unconvincing. Putnam’s arguments for the conclusion that, e.g., ‘the fusion of the Nelson Column and the Eiffel Tower exists’ is false on one meaning of ‘exists’, but true on another, are likewise unconvincing.

3. The fourth thesis: the single sense of ‘there is’ and ‘exists’ is adequately captured by the existential quantifier of formal logic. The nature of quantifiers and variables. Variables are essentially third-person-singular pronouns, each occurrence of which is tagged in such a way as to make its antecedent—an occurrence of ‘something’ or ‘everything’—clear. The occurrences of ‘something’ and ‘everything’ that are the antecedents of variables are the quantifiers. According to this understanding of quantifiers and variables, each of the two of the following sentences that contains ‘$\forall$’ and ‘$\exists$’ is an abbreviation of the sentence that follows it.

$\forall x(x \text{ is a person} \rightarrow \exists y(y \text{ is a person} \ \& \ x \text{ loves } y))$

Everything$_{x}$ is such that (it$_{x}$ is a person → something$_{y}$ is such that (it$_{y}$ is a person & it$_{x}$ loves it$_{y}$))

$\forall x(x \text{ is a person} \rightarrow \exists y(y \text{ is a person} \ \& \ y \text{ loves } x))$

Everything$_{x}$ is such that (it$_{x}$ is a person → something$_{y}$ is such that (it$_{y}$ is a person & it$_{y}$ loves it$_{x}$)).

Two implications of these theses: The idea that the real use of quantifiers requires the specification of a set of objects to be their “domain” is without ground; sorted variables are not primitive; they may be defined in terms of ordinary variables.

4. The fifth thesis concerns the application of “Quine’s criterion of ontological commitment”—that is, the strategy Quine encourages philosophers to follow to get their fellow philosophers to make their ontological commitments clear. To discover a philosopher’s ontological commitments, one should take sentences that philosopher accepts, and, by whatever dialectical devices one can muster, persuade the philosopher progressively to introduce more and more of the formal apparatus of quantification into those sentences. That is, one should attempt to persuade him or her to replace devices and constructions belonging to ordinary English with devices and constructions belonging to “the canonical notation of quantification.” If, at a certain point in this procedure, it transpires that the existential generalization on a certain open sentence F can be formally deduced from the sentences the philosopher accepts, and if F could be satisfied only by *X*s, that philosopher has been shown that the sentences he or she accepts, and the ways of introducing quantifiers and variables into those sentences that he or she has endorsed, formally commit those who endorse them to the existence of *X*s.

## Chapter II Being and Non-Being

1. Consideration of various possible answers to a challenge issued in Section 2 of Chapter I: If you think there are things that do not exist, give me an example of one. The right response to your example will be either “That does too exist” or “There is no such thing as that.” Only fictional characters (or, more generally, fictional objects: in addition to fictional people, such things as fictional schools and cities and rivers) present those who deny that there are non-existent objects with a difficult reply to this challenge. Our rejoinder to the reply “Mr Pickwick and Tom Sawyer and Elizabeth Bennett do not exist” will be, “They do too exist.”

2. Meinong and fictional objects. There seem to be many truths like these:

> The Cheshire Cat spoke to Alice and there is no such thing as the Cheshire Cat
>
> Pegasus is the winged horse captured by Bellerophon and there is no such thing as Pegasus.

How can the general truth of which these two example are instances be stated? ‘There are subject-predicate sentences such that the sentences formed by writing one of them and then writing “and there is no such thing as” and then writing its subject-term are truths’ will not do because it is a sentence about linguistic items and the semantical predicate ‘are truths’, and the “Cheshire Cat” and “Pegasus” sentences are not about linguistic items and contain no semantical predicates. Meinong suggested ‘There are things of which it is true that there are no such things’. But this seems to be equivalent to ‘$\exists x \sim\exists y\ y = x$’, which is the denial of a theorem of quantifier logic. (Anything follows from the denial of a theorem of logic, but one need not appeal to that fact to see that ‘$\exists x\ x \neq x$’ is immediately deducible from ‘$\exists x \sim\exists y\ y = x$’. This consequence can be avoided only by assuming that there are two “existential” (or “particular”) quantifiers. No one has been able to discover a way to state Meinong’s thesis that does not (at least apparently) have self-contradictory consequences.

3. Discourse about fiction seems to provide support for Meinong’s doctrine of *Außersein*—so to call the doctrine that objects of thought need have no being of any kind—because sentences like ‘There are fictional characters that appear in more than one novel’ *seem* both to be true and to imply that there are fictional characters. But that appearance could be reality only if the words ‘there are’ express a kind of quantification that goes beyond being. And, although Meinongians may understand this idea, it makes no sense to *me*. The Meinongian says,

$\sim \forall x \sim x$ is a unicorn,

and I cannot see how that statement could be anything but false. *Neo*-Meinongians do not require a kind of quantification that goes beyond being, but only a kind that goes beyond existence. But what do they mean by 'existence' and 'exists'? It seems evident to me that '$x$ exists' means '$\sim \forall y\, y \neq x$'—or at least evident that the two expressions differ in meaning no more than do 'All Greeks are mortal' and 'There are no immortal Greeks." This is incompatible with the neo-Meinongian understanding of 'exist', an understanding that has been denied me.

4. Suppose that one has become convinced that '$\exists x\, x$ is a fictional character' is a consequence of many true statements that are made in discussions of fictional works, and that one rejects the possibility of both quantification beyond being and quantification beyond existence. It seems that one must then accept the existence of fictional characters. But there are two powerful objections to the thesis that fictional characters exist:

> If there are fictional characters, then there are fictional characters who are (to take one example among many) witches (in virtue of works like John Updike's *The Witches of Eastwick*), and there are no witches.
>
> Fictional characters are paradigm cases of things that do not exist.

The answer to the first objection is that in discourse about fiction, we use the same words to express two different relations that fictional characters bear to properties. If we call these relations 'having' and 'holding', we may say that a "character who is a witch" *has* properties like these:

—being a fictional character
—being first introduced in Chapter II
—being also a character in another novel by the same author
—being played in the film adaptation of the novel by Susan Sarandon

and *holds* properties like these:

—being a woman
—having a father
—being a divorcée
—being a witch.

The word 'having' was chosen for its intrinsic meaning: the properties a fictional character "has" are exactly those that the character has. The word 'hold' in this context has no intrinsic meaning; it was chosen simply because 'to have and to hold' is a familiar phrase. It must be defined—and it is defined by discussion of particular cases: "Well, consider, Jane Spofford. She doesn't have the property 'being a witch'—for the very good reason that nothing does. Of course, there are lots of properties she doesn't have: she isn't an orc, and she isn't a neutron star and she isn't the Postmaster General of New Zealand. Among all the properties she does not have, she is obviously much more closely connected with the properties 'being a woman', 'having a father', 'being a divorcée', and 'being a witch' than she is with 'being an orc', etc. 'Holding' is simply a more or less arbitrary name for the relation that constitutes her closer connection with those properties. (If a fictional character holds a certain property *F*, that character *has* the property of holding the property *F*.) And—incidentally—we can refer to Jane Spofford as 'Jane Spofford' in discourse about fiction because we have adopted a convention to the effect that if a fictional character holds the property of having the name *N*, then *N* refers to him or her in fictional discourse. A parallel convention governs reference to fictional characters by means of gendered pronouns."

As to the second objection, it is by no means clear that fictional characters don't exist. If someone said, "Sherlock Holmes doesn't exist. He's a literary myth. Conan Doyle never created any such character," that person would say something false. But sentences like "Sherlock Holmes does not exist" have their uses. If someone said, "Only Sherlock Holmes could solve this case, and unfortunately, he doesn't exist," that speaker would be using 'Sherlock Holmes doesn't exist' to express the proposition that no one *has* all (or perhaps even very many of) the most salient of the properties that Sherlock Holmes holds. And if someone said, "Sherlock Holmes doesn't exit. He's only a chap in a story," *that* speaker would be using 'Sherlock Holmes to express the proposition that our use of the name 'Sherlock Holmes' is not grounded in one human being's having conferred that name on another, but is rather grounded in the fact that a certain fictional character holds the property of being named 'Sherlock Holmes'.

5. A *non-Meinongian* theory of fictional characters affirms (1) that fictional characters exist or have being, (2) that the use of the copula in fictional discourse is ambiguous: sometimes it functions as a true copula, sometimes to express the relation I call holding or something very much like it. Other non-Meinongian theories of fictional characters are those of Kripke, Wolterstorff, and Thomasson. Kripke's theory is essentially the same as mine. Wolterstorff's and Thomasson's theories are both consistent with mine, but each of them is inconsistent with the other—owing to the fact that both philosophers have said more than I care to say about the metaphysics of characters.

6. What has been said about fiction can easily be extended to apply to legend and myth.

7. Fiction (and legend and myth) provide no effective responses to the challenge, "If you think there are things that do not exist, give me an example of one." For the appropriate rejoinder to the response "Tom Sawyer" (or to the response "William Tell" or to the response "the Phoenix") is "that does too exist!"

There is no effective reply to the *reductio*, 'There are things that do not exist; *therefore*, $\exists x \sim\exists y\, y = x$; *therefore*, $\exists x\, x \neq x$."

## Chapter III Being and Abstraction

1. The problem of universals has become the problem of abstract objects. What 'abstract object' means is a difficult question. 'Abstract idea' is a much older phrase than 'abstract object'. It was once supposed that abstract ideas were formed by "abstraction," by "drawing away," by stripping "properties" from the "concrete" ideas supplied by sensation. ('Abstractus' is the past participle of *abstrahere*, to draw off.) Perhaps properties are called 'abstract' because of this role that they play in the process of abstraction. As for 'object', in the phrase 'abstract object' it is being used as the most general count noun—a count noun that applies equally to attributes and propositions and numbers on the one hand and to artifacts and living things and celestial bodies on the other.

2. Propositions and relations and numbers play no part in the formation of abstract ideas. Why then do we call them 'abstract'? Presumably because we recognize some sort of ontological affinity between those objects and properties.

Here is a list of names and general terms such that anything that is denoted by these names or falls under these terms—if anything does—is a concrete object: the Eiffel Tower, artifacts, the present king of France, rocks, lions, Uranus (god or planet), the golden mountain, elves, Descartes's soul, angels, God.

Here is a list of names and general terms such that anything that is denoted by these names or falls under these terms—if anything does—is an abstract object: the real line, properties, relations, 1 divided by 0, propositions, sets, novels (as opposed to tangible copies of novels), the color of the eyes of the present king of France, the General Theory of Relativity, kinds, the mixolydian mode.

Even those philosophers who rightly insist that elves and the ratio of 1 to 0 do not exist will probably judge that 'elves' and '1 divided by 0' have both been included in the right list—and so for all the other words and phrases in the two lists. This uniformity of judgment among philosophers concerning placement of words and phrases in one or the other of the two lists strongly suggests that philosophers mean something by the two words and mean pretty much the same thing by them. But what would that meaning be?

If we take universals as our paradigmatic abstract objects, we might say that an abstract object is a thing that has instances. But that proposal does not fit sets or propositions well. And what of uninstantiated properties? What of impossible properties—properties that not only do not but *cannot* have instances?

Might abstract objects be things that are not in space and time, or things that exist necessarily? Either suggestion threatens to place 'God' in the same list as '17' and 'the mixolydian mode' and '1 divided by 0'. And 'God' should not go in that list because it purports to denote a being who has causal powers. Moreover, some philosophers would say that various abstract objects exist contingently—{Quine, Goodman}, say, or the proposition that Socrates taught Plato.

Is it, then, that the meaning of 'abstract object' is simply 'thing without causal powers'? It may well be that something is an abstract object if and only if it lacks causal powers, but it may well be that something is a word if and only if it has a spelling. It seems that a proper understanding of 'abstract object' ought to explain *why* abstract objects and only they lack causal powers.

In the end, no satisfactory explicit, formal definition of 'abstract object' is available. Nevertheless, "abstract object" and the opposed "concrete object" seem to be concepts that we have. Those who affirm the existence of abstract objects will say that propositions and numbers are abstract objects, and those who deny the existence of abstract objects will say that if there *were* propositions and numbers they *would* be abstract objects. And, of course, everyone believes that if there were unicorns or elves they would be concrete objects.

Let us turn to the question why some philosophers deny and some affirm the existence of abstract objects. An examination of this question—interesting an important in its own right—may also shed some light on the question of the meaning of 'abstract object'.

3. If *platonism* is the thesis that there are abstract objects, it would be philosophically desirable to accept only philosophical positions that do not require their adherents to affirm the existence of abstract objects. For to affirm platonism is to affirm that objects fall into two mutually exclusive kinds, each radically different from the other. And, by a certain measure, we know vastly more about some of the objects in the kind to which we ourselves belong than we could ever know about any of the members of the other. Unfortunately, this desirable end, like so many other desirable ends, is unrealizable—for we must affirm the existence of properties if we are to say all the things we need to say.

4. We certainly *do* affirm the existence of properties, although generally only tacitly.

That is, when we speak and think we endorse certain propositions, and those propositions entail the existence of properties. For example, quantificational analysis shows that 'There are anatomical characteristics' is deducible from 'Every spider shares certain anatomical characteristics with every insect' and 'There are spiders and insects'. And if that is so, platonists have four options (besides embracing a contradiction): (i) To become platonists; (ii) to deny the propositions expressed by the two 'spider'-'insect' sentences; (iii) to attempt to show that it does not follow from those two propositions that anatomical characteristics exist; (iv) to concede that the existence of anatomical characteristics is *apparently* deducible from the 'spider'-'insect' sentences, but to insist, without argument, that the appearance of deducibility is mere appearance and that there is a logical flaw in the claimed deduction. By far the most appealing of these options is (iii). A platonist who took this option would proceed to offer *nominalistically acceptable paraphrases* of "useful, everyday" sentences that apparently implied the existence of properties, paraphrases that did not even apparently imply the existence of properties—and which did not imply the existence of any other objects whose existence would be inconsistent with nominalism (Fregean concepts, for example, or sets). But this does not seem to be possible—at least not if the paraphrases satisfy this constraint: a paraphrase must not leave us without an account of the validity of any obviously valid argument.

What has been said has some points of contact with the so-called Quine-Putnam indispensability argument. But, unlike that argument, it has nothing to do with the supposed indispensability to science of quantification over mathematical objects, and its conclusion is not, strictly speaking, that properties exist, but rather that frequent reference to and quantification over properties is an indispensable component of our thought and discourse.

5. If we affirm the existence of properties, we ought to have a theory of properties—a specification of the *properties* of properties. Our argument for the conclusion that frequent reference to and quantification over properties is an indispensable component of our thought and discourse does not tell us much about their nature. It tells us that analysis of our thought and discourse shows that we tacitly assert the existence of things that play "the property role," but it tells us little if anything about what they are like. Nor does it seem possible to say much about what they are like. I know of only one philosopher who has clearly and meaningfully specified the nature of the things that play the property role: properties are sets of possible individuals.

6. For Lewis, the property "being a pig" is the set of all possible pigs, all pigs, actual and non-actual—a non-actual pig being a pig whose home is at no place shown on our maps and which exists at no dates that are to be found on our calendars. But there is no reason to think that there are such things, and there is no reason to suppose that, if there are, the existence of such remarkable beasts would have any important connections with modality. One might, of course, agree with Lewis's statement that the property of being a pig is the set of all possible pigs, and agree, too, with his conviction that those pigs that we ordinarily think of as "all pigs" are but a minuscule subset of the set of pigs—and yet disagree with his statement that the vastly many pigs that are not in that subset are the pigs that are not spatio-temporally related to us. A Meinongian might say that they are the non-existent pigs, and identify the property of being a pig with the set of all pigs: existent pigs, merely possible pigs, even impossible pigs. But nothing could constitute a greater departure from the Quinean meta-ontology than Meiongianism.

7. I propose to identify the objects that play the property role with assertibles, with things that can be said.

*Saturated* assertibles (or propositions) are things that can be said, full stop: that Chicago has a population of over two million, that no orchid has ever filed an income tax return....

Properties are *un*saturated assertibles, that is, things that can be said *of* things: that *it* has a population of over two million, that *it* has never filed an income tax return,.... Things that can be said (full stop) could also be called things that are true or false. Things that can be said of things could also be called things that are true or false of things.

There seem to be things that can be said of things. We quantify over them when we say things like 'All the negative things you've said about Oxford are perfectly true, but don't you see that they're equally true of Cambridge?' There are, of course, "Russellian" difficulties that attend the idea of an unsaturated assertible. For if there are things that can be said of things, there are things that can be said of things that can be said of things. One of them is *that it can't be said truly of itself.* It seems that if Alice says, "*That it is white* can't be said truly of itself," and Bertram says, "*That it has a population of over two million* can't be said truly of itself," then—if there are unsaturated assertibles at all—there is an unsaturated assertible that Alice said of *that it is white* and Bertram said of *that it has a population of over two million.* But as a familiar argument shows, if there is such an assertible, it both can and cannot be said truly of itself. There are ways of dealing with the question, "Which open sentences correspond to sets?" I propose that one or the other of these ways be adapted to provide a way of dealing with the question, "Which open sentences correspond to unsaturated assertibles?"

Perhaps there would not be much opposition to the thesis that—granted that there are such things—unsaturated assertibles could play the property role. But are they properties? I make no stronger proposal than this: I invite my readers to *identify* properties with unsaturated assertibles; but, if they are unwilling to do that, then I invite them to abandon reference to and quantification over properties, and to adopt reference to and quantification over unsaturated assertibles in their place.

If properties are indeed assertibles, then a wide range of things various philosophers have said about properties make no sense.

If properties are assertibles, then properties cannot meaningfully be said to be constituents of concrete objects.

If properties are assertibles, it makes no sense to say that properties are more basic or more fundamental than their bearers—or that their bearers are more basic or fundamental than they.

If properties are assertibles, it makes no sense to speak either of objects as bundles of attributes or as bare particulars.

If properties are assertibles, it makes no sense to speak of perceiving them.

There are, moreover, historically important theses about properties that are obviously false if properties are assertibles.

If properties are assertibles, then existence is a property—for one of the things one can say of something is that it exists. (If this were not so, one could not say, "Kant exists, but he might not have.")

If properties are assertibles, there are haecceities, although perhaps not of a kind that would have interested Scotus. When Socrates says of the figure approaching through the mist, "It is Plato who approaches us," he ascribes an haecceity to it.

If properties are assertibles, there are complex properties such as being either red or not round—for one of the things you can say about Mars is that it is either red or not round.

If properties are assertibles, there are uninstantiated properties. For one of the things you can say about something is that it is a fountain of youth. There are, in fact, impossible properties, since one of the things you can say about something is that it is a book that contains a valid proof of the existence of a greatest prime.

If properties are assertibles, then they exist necessarily. For suppose that (for example) *that it is white* exists only contingently. Then there is a possible world *w* in which the proposition that something is white does not exist. And then the actual world does not exist in *w*. But *w* exists in the actual world. Therefore, if *that it is white* (or any assertible) exists only contingently the accessibility relation is not symmetrical. And the accessibility relation obviously is symmetrical.

## Chapter IV Being and Possibility

1. The topic of this chapter is the ontology of possibility—of alethic, as opposed to epistemic, possibility, and of the kind of alethic possibility sometimes called "logical" or "broadly logical" possibility. But these are misnomers. Logic (eked out by appeals to the meanings of non-logical words) cannot demonstrate the impossibility of a differentiable function that cannot be approximated locally by some linear function. If we conclude from this fact that such functions are "logically possible," we affirm nonsense, for there is no sense of 'possible' in which they are possible.

2. The kind of alethic possibility whose ontology is investigated in this chapter is neither physical possibility nor biological possibility nor technological possibility nor any other "restricted" possibility. It is, rather, *unrestricted* or *absolute* possibility. If a proposition is physically possible, it is *possible* for it to be true and the laws of nature to be as they actually are. The italicized 'possible' in the previous sentence expresses unrestricted or absolute possibility. If there is restricted possibility, there must be unrestricted possibility.

3. David Lewis has said:

> I believe that . . . there are many ways things could have been besides the way they actually are. . . . this sentence is an existential quantification. It says that there exist many entities of a certain sort, to wit, 'ways things could have been'.

But what sort of thing are these entities? Let us assume they are not what Lewis says they are. I proceed to offer my own proposal.

4. Canonical possibility names, that is, phrases like

The possibility that there be pigs that fly
The possibility that Napoleon have won at Waterloo,

represent themselves as naming possibilities. But this representation may be fraudulent—witness 'the possibility that $7 + 5 = 13$', which lacks a referent, since there is no such possibility. Each possibility name corresponds to a proposition name—in these two cases, 'the proposition that there are pigs that fly', and 'the proposition that Napoleon won at Waterloo'. 'The possibility that Napoleon have won at Waterloo' denotes a possibility just in the case that the proposition that Napoleon won at Waterloo is possibly true, and that possibility is *realized* just in the case that the proposition that Napoleon won at Waterloo is true. Possibilities $x$ and $y$ are identical if and only if they are necessarily both realized or necessarily both unrealized. Possibility $x$ *includes* possibility $y$ if and only if it is impossible for $y$ to be unrealized if $x$ is realized. Possibility $x$ *precludes* possibility $y$ if and only if it is impossible for $y$ to be realized if $x$ is realized. A proposition is *true in* a possibility $x$ if and only if $x$ includes the possibility that it be true. An object *exists in* a possibility $x$ if and only if $x$ includes the possibility that it exist. A *possible world* is a possibility that, for every possibility, either includes or precludes that possibility. *The actual world* is the realized possible world.

Lewis's indexical theory of actuality cannot be incorporated into this ontology: it presupposes that ways things could be are *concreta*.

The actual world cannot mean 'this world': no world among all the worlds a human speaker exists in is salient enough to be the referent of an indexical.

In calling "maximally inclusive" possibilities 'possible worlds' we are not misusing the word. The use of the word 'world' to mean something like 'life' or 'the human condition' is older than the meaning 'the cosmos'.

The modal operators can be defined in terms of possible worlds. We have in fact three modal idioms in English: modal predication ('The proposition that $7 + 5 = 12$ is necessarily true'), quantification over modal objects ('The proposition that $7 + 5 = 12$ is true in every possible world'), and the modal operator idiom ('It is necessarily true that $7 + 5 = 12$'). The ideology of modal logic is a refinement of modal predication, and the ideology of possible-world semantics for modal logic is a refinement of the modal operator idiom.

5. Are there possibilities *in addition to* possible propositions?

It is not necessary to suppose that there are. We can eliminate *sui generis* possibilities from our ontology in favor of propositions if we suppose that for any $x$s, if those $x$s are propositions, there is a unique proposition that is the conjunction of the $x$s. (We stipulate that every proposition is both a conjunction of propositions and a conjunct of a conjunction of propositions—for we stipulate that every proposition is the conjunction of the propositions with which it is identical.)

We may then define a "possibility" as the conjunction of the propositions necessarily equivalent to some possible proposition, and further define a "world-proposition" as a possible proposition that, for every proposition *x*, entails either *x* or the denial of *x*. We may then proceed to define a possible world as a possibility that, for every possibility *x*, entails either *x* or the denial of *x*. Or—an equivalent definition—we may say that a possible world is a proposition that, for some world-proposition *x*, is the conjunction of the propositions necessarily equivalent to *x*. And the actual world is the sole such proposition that is true.

6. "But why bother with 'possibilities' at all. Why not simply say that possible worlds are world-propositions?"

One might say that. But that definition would have the consequence that there were a vast number of actual worlds. (Owing to the fact that there are identical but necessarily equivalent propositions.) Perhaps this consequence is tolerable, but it is counterintuitive. Or suppose that it is possible for there to be nothing (concrete) and that the proposition that there is nothing (N) is a world-proposition. If possible worlds are world-propositions, then N and the proposition that everything is a mathematician who has proved that Euclid's Parallel Postulate follows from his other postulates (P) are both possible worlds—and, necessarily, N and P are either both actual or both non-actual.

7. Why assume that there are possible worlds, even given that there are possibilities?

Every possibility includes itself. A possible world is a *comprehensive* possibility, a possibility included in no possibility but itself. How do we know that *this* is not true: Every possibility is properly included in some possibility?

Let 'the Realized' be a proper name of (a rigid plural designator) the possibilities that are realized. Although there is a plausible argument for the conclusion that the possibility that the Realized be realized ($\mathfrak{R}$) is a comprehensive possibility—the actual world—, nothing that has so far been said implies either that there are unrealized comprehensive possibilities or that there are not. The question is: What possible worlds are there? "Only the actual world is a possible world" is one answer. This answer is correct if Spinozism (the thesis that all possibilities are realized) is true. But could it be that the actual world is the only possible world and also the case that there are unrealized possibilities? In that case, there would be possibilities that were included in no possible world. The proposition that every possibility is included in some possible world may be called the Principle of Plenitude, a principle that implies that there are no gaps in logical space. (Logical space is a space whose points are possible worlds. If it is possible for there to be flying pigs but there is no possible world in which pigs fly, the consequent "gap in logical space" is the absence of possible worlds in which pigs fly.)

But there is no real argument for the Principle of Plenitude. And the only argument for there being any non-actual possible worlds at all—any unrealized comprehensive possibilities—is that would be an astonishing coincidence if it happened that, although there are unrealized possibilities, the possibilities that are included in possible worlds are just exactly the realized possibilities.

It is therefore important to note that a modal ontology based on possibilities need not suppose that any of them is a comprehensive possibility. One may say that a proposition is possible if it is true in some possibility, necessary if true in every possibility . . . and so on. Moreover, we need give an account of only one modal property or relation, for any and all modal properties can be eliminated in favor of any one modal property. If, for example, we choose 'inconsistent with' as our sole piece of modal language, we could replace, e.g., '$x$ is necessary' with '$\forall y$ ($x$ is inconsistent with $y \rightarrow \forall z$ ($y$ is inconsistent with $z$))' and '$x$ is possible' with '$\exists y \sim x$ is inconsistent with $y$'.

8. Essentially the same point applies to any modal ontology that treats "possible worlds" as some among the objects of a certain sort of proposition-like abstract object, to wit, the ones of that sort that are *maximal*. Plantinga's modal ontology, for example, identifies possible worlds with possible maximal states of affairs—a maximal state of affairs being one that, for every state of affairs $x$, either includes $x$ or precludes $x$. Since worlds are states of affairs, to say of a world that it is actual is to say that it obtains. He considers the question 'How many worlds are actual?' only very briefly. His brief consideration of this question begins with the words, "Obviously, *at least* one possible world obtains." But this is not at all obvious if states of affairs are as "fine-grained" as propositions. And it is natural to suppose that propositions and states of affairs can be paired in the way illustrated by: the proposition that Socrates is snub-nosed and *Socrates' being snub-nosed*; the proposition that $7 + 5 = 12$ and *the sum of 7 and 5's being 12*, and that the proposition in each such pair is true if and only if the state of affairs that is its other member obtains.

9. We have said that an object *exists in* a possibility $x$ if and only if $x$ includes the possibility that it exists. Obviously, there are possible worlds in which there exist objects that do not exist in the actual world. But such things are things that might exist but don't—and things that might exist and do not exist are things that do not exist. But, as we saw in Chapters I and II, there are no things that do not exist. It must, therefore, be that everything that exists exists in the actual world. Philosophers who take this view are called actualists, and those who oppose it possibilists.

A possibilist who addressed the following complaint to me would be a typical possibilist:

> '$\exists x$' means 'for some $x$', and not, as you evidently suppose, 'for some actual $x$'. No doubt your mistake is to be explained by the fact that in many contexts, we

> restrict the domain of our quantifiers to actual objects. But not in all contexts. You, van Inwagen, have developed from a zygote which was produced by the union of a particular egg and a particular spermatozoon. Suppose some other sperm had fertilized that egg. (There were a lot of runners in that race!) Then your mother would not have given birth to you in September of 1942, but to someone else. And that 'someone else' is a possible person who does not actually exist.

In Section 9, I reply to complaints of this sort by presenting some text from a draft of the late Derek Parfit's *On What Matters* together with my running commentary on this text. Since much of the present section is in Parfit's own words, I will not summarize it. The argument of this section, however, is essentially the argument against there being non-existent objects that was presented in first two chapters, supplemented by the following reply to the above complaint:

> An object is called 'possible' if it is possibly F, where 'F' represents an adjective that is determined by the kind of object it is: so a possible proposition is a proposition that is possibly true, a possible property is a property that is possibly exemplified, and a possible state of affairs is a state of affairs that possibly obtains. Turning to concrete objects, a possible person or a possible pig can only be a person who possibly *exists* or a pig that possibly *exists*. We rarely speak of actual propositions or actual properties, but an actual state of affairs is a state of affairs that actually obtains, and an actual person is a person who actually exists. But (leaving aside such constructions as 'thought my yacht was longer than it actually is'), 'actually' is semantically redundant: 'Roses are actually red' has the same truth-conditions as 'Roses are red'. So 'for some actual $x$ $(\ldots x \ldots)$' is equivalent to 'for some $x$ that actually exists $(\ldots x \ldots)$', which is equivalent to 'for some $x$ that exists $(\ldots x \ldots)$', which is equivalent to 'for some $x$ ($x$ exists $\& \ldots$)' which is equivalent to 'for some $x$ (for some $y$ $y = x$ $\& \ldots$)', which is equivalent to 'for some $x$ $(\ldots x \ldots)$'. I say, then, just as you do, that '$\exists x$' means 'for some $x$'—but it *also* means 'for some actual $x$', for those two phrases are two ways of saying the same thing.

The terms 'actualism' and 'actualist' have caused a great deal of harm (in the form of philosophical confusion) and should be abandoned. But there is little chance of this happening.

10. But what of the Kripke semantics for quantified modal logic (QML)? Does it not require reference to and quantification over *possibilia*? And is that not a powerful argument for including *possibilia* in our ontology?

The following pair of sentences illustrates the intuitive ideas that motivate Kripke semantics.

> ∀*x* ~ ◊ *x* is immaterial
>
> ∀*x* (in α, E*x*. → ~ ∃*y* (*y* is a world & in *y*, *x* is immaterial)).

The first is the result of substituting the English predicate 'is immaterial' for a predicate letter in a sentence of the language of QML. The second is the Kripke truth-condition for the first. The quantifiers of the meta-language—the language in which the truth-conditions for modal statements are expressed—range over *possibilia*. In this language, 'α' denotes the actual world, and 'E' is an existence predicate (which is not assumed to be a universal predicate—not assumed to be co-extensive with '∃*y y* = *x*' or '*x* = *x*'). A *possibile* that falls outside the extension of 'E*x*' is a *mere possibile*.

If we suppose that every existent thing is material and could not have been immaterial, Kripke semantics implies that '∀*x* ~ ◊ *x* is immaterial' is true—and does not imply that '◊ ∃*x x* is immaterial' is false.

If one refuses to include mere *possibilia* in one's ontology, haecceities are a promising substitute. Thomas Jager has constructed an haecceity-based semantics for QML. In Jager semantics, the truth-condition for '∀*x* ~ ◊ *x* is immaterial' is

> ∀*x* (*x* is an haecceity & in α, *x* is instantiated . → ~ ∃*y* (*y* is a world & in *y*, *x* and immateriality are co-instantiated)).

An alternative haecceity-based semantics assigns the truth-condition

> ∀*x*∀*y* (H*yx* → ~ ∃*z* (*z* is a world & in *z*, *y* and immateriality are co-instantiated))

to '∀*x* ~ ◊ *x* is immaterial'. ('H*xy*' abbreviates '*x* is the haecceity of *y*'. The alternative semantics does not require a symbol that designates the actual world.) The alternative semantics avoids a subtle technical difficulty that infects Jager semantics.

It seems, therefore, that it is possible to provide a semantics for quantified modal logic that does not involve *possibilia*.

## Chapter V Being and Generality

1. In Chapter I, sentences containing '∀' and '∃' and natural-language predicates were introduced as abbreviations of sentences of a regimented version of English. To do this, it was maintained, was to explain the meanings of '∀' and '∃'.

I could have done more. I could have noted the common structural characteristics of the two sentences

> $\forall x$ (if $x$ is a person, then, if $x$ acts as the attorney of $x$, $\exists y$ ($y$ is a client of $x$ and $y$ is a fool))
>
> $\forall x$ (if $x$ is a proposition, then, if $x$ entails the falsity of $x$, $\exists y$ ($y$ is a necessarily false proposition and $x$ entails the truth of $y$)).

I could have gone on to introduce "predicate letters" and sentential connectives and have produced displays like this:

$$\forall x\,(\mathrm{F}x \rightarrow (\mathrm{G}xx \rightarrow \exists y\,(\mathrm{H}yx)).$$

A much more usual procedure, however, would have been to start with sentences like that one—sentences in the language of "first-order logic"—and then, for each assignment of an extension to a predicate letter, to "chase truth up the tree of grammar." That is (in the present case), to find the truth or falsity of the sentence, given the extensions assigned to 'F', 'G', and 'H'. In this procedure, the quantifiers are treated as "extension transformers." For example, the extension of the open sentence '$\mathrm{F}x \rightarrow (\mathrm{G}xx \rightarrow \exists y\,(\mathrm{H}yx))$' is a certain set. Prefixing '$\forall x$' to that sentence produces a sentence that has the extension 'truth' if everything belongs to that set and falsity if anything does not. And to show how expressions like '$\forall x$' and '$\exists y$' transform extensions (it is held) is to explain the meanings of '$\forall$' and '$\exists$'.

This explanation of the meanings of '$\forall$' and '$\exists$' is sometimes called "the objectual interpretation of the quantifiers." The objectual interpretation certainly does imply that there is a close connection between, on the one hand, the meaning of '$\forall$' and the meanings of words like 'all' and 'any' and 'each' and 'every', and, on the other, the meaning of '$\exists$' and the meanings of words and phrases like 'some' and 'there is a' and 'exists'—for the former words are essential to the explanation of how '$\forall x$' and '$\forall y$' and so on, transform extensions, and the latter are essential to the objectualist explanation of how '$\exists x$' and '$\exists y$' and so on, transform extensions.

I prefer not to regard the objectual interpretation of the quantifiers as an interpretation at all. (In my view, the quantifiers need no interpretation, occurring as they do only in abbreviations of sentences of regimented English.) I prefer to regard it as a truth-theory—a beautiful and true truth-theory—for sentences of that regimented dialect of English. The discussion of "substitutional quantification" in the section that follows will address the thesis that a truth-theory *is* a meaning theory.

2. The following statement is extremely plausible: 'The sentence "Some of the gods worshiped by the Greeks were worshiped under other names by the Romans" expresses a truth, so it cannot be right to say that it is true if and only if something

belongs to the extension of "*x* is a god who was worshiped by the Greeks and was worshiped under another name by the Romans."'

The plausibility of that statement has led many philosophers to affirm the existence of a species of quantification different from objectual quantification—a species called *substitutional* quantification. If 'Σ' is the substitutional analogue of '∃', the truth-condition for 'Σ*x x* is a dog' is

> There is a name such that the result of replacing the variable '*x*' with that name in the open sentence '*x* is a dog' is a sentence that expresses a true proposition.

Some writers speak of two rival interpretations of "the quantifier." Others see the objectual existential quantifier and the substitutional existential quantifier (or, better, the substitutional *particular* quantifier) as two different operators—in no way rivals. Here the latter position has been adopted. (Note that 'there is' in the statement of the truth-condition for 'Σ*x x* is a dog' can hardly be supposed to be a substitutional quantifier.)

One problem for the friends of substitutional quantification is the problem of objects that have no names—and objects that *can* have no names (such as well-ordering relations on the real numbers, whose existence is a consequence of the axiom of choice). A more serious problem lies in the fact that no one has ever said what the sentence 'Σ*x x* is a dog' means—or has said what any sentence of the form 'Σ*x* F*x*' means. We have been told that it is true just in the case that there is a name such that the result of replacing the variable '*x*' with that name in the open sentence '*x* is a dog' is a sentence that expresses a true proposition. One sentence that has that truth-condition is 'There is a name such that the result of replacing the variable "*x*" with that name in the open sentence "*x* is a dog" is a sentence that expresses a true proposition'. But the proponents of substitutional quantification say that that sentence and 'Σ*x x* is a dog' have different meanings. We have been told only this: There are sentences that are true if and only if 'There is a name such that (etc.)' is true, and 'Σ*x x* is a dog' is one of them.

We understand 'Σ' no better than we should understand '⋀' if we were told these two things and nothing more:

> For any variable $\alpha$ and any sentence $F$,
>
> $\ulcorner \wedge \alpha F \urcorner$ is true if and only if $\ulcorner \forall \alpha F \urcorner$ is true

and

> '⋀' means something different from '∀' and $\ulcorner \wedge \alpha F \urcorner$ means something different from $\ulcorner \forall \alpha F \urcorner$.

Could it be that 'Σ'-sentences are abbreviations of infinitely long disjunctions (and '**A**'-sentences—where '**A**' is the dual of 'Σ'—of infinitely long conjunctions)? *Are* there infinitely long sentences—other than set-theoretical constructions of some sort? A sentence of the form '$\Sigma x$ A$y$ F$xy$' will be an abbreviation of an infinitely long disjunction each of whose disjuncts is an infinitely long conjunction. If such sentences exist, can we understand them? I cannot understand the sentence I gesture at by writing the incomplete expression '0 is even and 1 is odd and 2 is even and 3 is odd and . . . 999 is odd', and that sentence, far from being infinite, comprises only 3,999 words. Of course, I can understand the sentence '0 is even and any number less than 1000 is odd if it is the successor of an even number, and is even if it is the successor of an odd number'—but that sentence contains only thirty-two words.

3. The expression '$\forall p\ (p \vee {\sim}p)$' contains a "sentential quantifier" and a "sentential variable." It is said to be equivalent to neither '$\forall x$ ($x$ is a proposition $\rightarrow$. $x$ is true $\vee$ ${\sim}x$ is true)' nor '$\forall x$ ($x$ is a sentence $\rightarrow$ the alternation of $x$ with the negation of $x$ is true)' nor any expression that contains nominal variables. The thesis that sentential quantification is meaningful has at least two important philosophical consequences. First, an explicit definition of the truth-predicate is possible:

$$x \text{ is true} =_{df} \exists p\ (x = \text{the proposition that } p\ \&\ p).$$

Secondly, those who wish not to quantify over propositions can avoid doing so and still to be able to provide formal representations of the quantificational structure of statements like 'Some of the things Nixon asserted on Tuesday contradicted some of the things Dean asserted on Wednesday'.

But *is* sentential quantification meaningful? How is it to be understood? '$\forall p\ (p \vee {\sim}p)$' might be understood "substitutionally"—that is, as equivalent to 'A$x$ ($x \vee {\sim}x$)' (it being understood that substitution-instances of '$x \vee {\sim}x$' are obtained by replacing '$x$' with sentences, not terms). But if substitutional quantification has never been adequately explained, some other way must be found if philosophers are to have this useful device at their disposal.

I have proposed that nominal variables be understood as (essentially) third-person-singular pronouns. Dorothy Grover has proposed that sentential variables be understood as "prosentences"—a prosentence being a word or phrase that is not a sentence, but which (i) can be used for many of the same purposes as a sentence: it can be used to make a statement, it can serve as the antecedent of a conditional . . . and (ii) can be used anaphorically: occurrences of a prosentence can have antecedents.

But are there prosentences? Skeptics like myself will ask to be shown either a prosentence or at least some sort of argument to show that the properties Grover's definition of prosentence comprises are mutually consistent. Grover followed Joseph Camp's suggestion that 'it is true' is a prosentence, but in many contexts 'it is true' behaves not like a semantically indivisible unit, but like the open sentence '$x$ is true'. And, if we wish to represent '$\forall p\,(p \lor {\sim}p)$' as an abbreviation of a sentence of a supplemented and regimented modification of English, a sentence that consists of something prefixed to 'it is true ∨ ~ it is true', what will that "something" be? No answer to this question suggests itself.

4. If there are sentential variables and quantifiers, there are predicative variables and quantifiers—witness

$$\forall \mathrm{F} \forall x \forall y\,(\mathrm{F}x \,\&\, x = y. \rightarrow \mathrm{F}y).$$

Such expressions are, from the point of view defended in this volume, meaningless, owing to the fact that there are no "pro-verbs" or "propredicates" that can stand to predicative variables (so-called) as pronouns stand to nominal variables (redundantly so-called). Still, there do seem to be sentences that are in some sense nominal-variable counterparts or analogues of that sentence. For example,

> $\forall x \forall y \forall z \forall w$ ($x$ is a variable & $y$ is a variable & $z$ is an open sentence in which $x$ alone is free & $w$ is the sentence obtained by replacing each free occurrence of $x$ in $z$ with $y$. $\rightarrow$ $\ulcorner \forall x \forall y\,(z \,\&\, x = y. \rightarrow w) \urcorner$ is true.
>
> $\forall z \forall x \forall y$ ($z$ is a set $\rightarrow$ ($x \in z \,\&\, x = y. \rightarrow y \in z$)
>
> $\forall z \forall x \forall y$ ($z$ is a monadic unsaturated assertible $\rightarrow$ ($z$ is true of $x$ & $x = y$. $\rightarrow$ $z$ is true of $y$)

(The second and third of these sentences are instances of theorems of nominal-variable quantificational logic with identity. The first says that all sentences constructed in a certain way are true, and all sentences constructed that way are instances of theorems of nominal-variable quantificational logic with identity. This is due to the fact that the expression that results from dropping the initial '$\forall \mathrm{F}$' of '$\forall \mathrm{F} \forall x \forall y\,(\mathrm{F}x \,\&\, x = y. \rightarrow \mathrm{F}y)$', and treating 'F' in that expression as a predicate letter rather than a free predicative variable, is a theorem of nominal-variable quantificational logic with identity.) We can think of these three sentences as possible "nominal-variable" paraphrases of a sentence—'$\forall \mathrm{F} \forall x \forall y\,(\mathrm{F}x \,\&\, x = y. \rightarrow \mathrm{F}y)$'—that contains occurrences of a predicative variable.

Such paraphrases are not difficult to provide except in the third, or "unsaturated assertible" case, and then only in the case of expressions like

$$\exists \mathrm{F} \forall x \forall y\; \mathrm{F}xy,$$

—that is, expressions in which an occurrence of a predicative variable is followed by two or more occurrences of nominal variables.

A "first draft" of a nominal-variable paraphrase of '$\exists \mathrm{F} \forall x \forall y\; \mathrm{F}xy$' might be

> $\exists z$ ($z$ is a dyadic unsaturated assertible &$\forall x \forall y$ ($z$ is true of $x$ and $y$)),

but then how shall we paraphrase

> $\exists F \exists x \exists y\ (Fxy\ \&\ {\sim}\ Fyx)$

—a sentence that is supposedly a logical consequence of the truth

> $\exists x \exists y$ ($x$ is north of $y$ & ~ $y$ is north of $x$).

The paraphrase cannot be

> $\exists z \exists x \exists y$ ($z$ is a dyadic unsaturated assertible & $z$ is true of $x$ and $y$ & ~ $z$ is true of $y$ and $x$),

for there is no semantical difference between 'true of *x* and *y*' and 'true of *y* and *x*'. The problem is created by the (presumed) existence of non-symmetrical relations. If a relation is an unsaturated assertible, and if there are non-symmetrical relations, there are non-symmetrical unsaturated assertibles. If speaker A says, 'Edinburgh is north of London', it seems that there is something A said of Edinburgh and London—and of London and Edinburgh—and that it is true of them. If speaker B says 'London is north of Edinburgh', it seems that there is something B said of Edinburgh and London—and of London and Edinburgh—and that it is false of them. Either (it seems)

(i) There is something *x* such that, in asserting that Edinburgh is north of London, A said *x* of Edinburgh and London and *x* is true of Edinburgh and London, *and* there is a distinct thing *y* such that, in asserting that London is north of Edinburgh, B said *y* of Edinburgh and London and *y* is false of Edinburgh and London

or

(ii) There is something *x* such that, in asserting that Edinburgh is north of London, A said *x* of Edinburgh and London in a certain way and *x* is true of Edinburgh and London in that way, *and*, in asserting that London is north of Edinburgh, B said *x* of Edinburgh and London in a certain way, and *x* is false of Edinburgh and London in that way.

Here, the latter disjunct is chosen. We shall adopt a method of paraphrase illustrated by the paraphrase of '$\exists F \exists x \exists y\ (Fxy\ \&\ {\sim}\ Fyx)$':

> $\exists z \exists x \exists y$ ($z$ is a dyadic unsaturated assertible & $z$ is $xy$ true of $x$ and $y$ & ~ $z$ is $yx$ true of $y$ and $x$),

But what does ‘*z* is *xy* true of *x* and *y*’ mean?

Let us say that expressions like ‘—— is north of ——’ are *two-place predicates*. A two-place predicated *expresses* a dyadic relation. Let ‘R(—— is north of ——)’ denote the relation expressed by ‘—— is north of ——’. Say that ‘Edinburgh is north of London’ is the ‘Edinburgh’-‘London’ completion of ‘—— is north of ——’, and that ‘London is north of Edinburgh’ is the ‘London’-‘Edinburgh’ completion of ‘—— is north of ——’. Then,

> $z$ is $xy$ true of $x$ and $y =_{df} \forall u \forall v \forall w$ ($u$ is a predicate & $u$ expresses $z$ & $v$ is a term & $v$ denotes $x$ & $w$ is a term & $w$ denotes $y$. $\rightarrow$ the $vw$ completion of $u$ is true).

This definition can be extended to *n*-term relations for any $n > 2$, although the number of ways in which an *n*-term relation can be said to be true of *m* objects increases rapidly as either of those numbers increases. The tetradic relation expressed by the predicate ‘—— is north of —— and —— is west of ——’ can be said to be true of Edinburgh, Manchester, and London in thirty-six ways. There is, for example, the statement that that relation is Edinburgh London Manchester London true of those three cities—a statement that is true just in the case that Edinburgh is north of London and Manchester is west of London.

We now have the resources to paraphrase sentences containing predicative variables as sentences that contain only nominal variables.

## Chapter VI Lightweight Platonism: An Ontological Framework

1. This chapter presents a meta-ontology and an ontology (“Lightweight Platonism”) within which the conclusions of the five preceding chapters can be placed.

The meta-ontology incorporates the conviction that being is a thin concept—thin because the following open sentences are necessarily extensionally equivalent:

> $x$ exists
> $\exists y\, y = x$
> $x = x$
> There is such a thing as $x$
> It is not the case that everything is something other than $x$
> The number of things that are identical with $x$ is greater than 0.

It also endorses a method for ontology: to extract philosophically interesting existential propositions from the beliefs of non-philosophers and from the beliefs philosophers bring to philosophy. A Quinean analysis of our discourse uncovers various roles that—that discourse presupposes—are filled by something or other. Metaphysical reasoning then attempts to specify the properties that a "something or other" that could play those roles would have to have.

The meta-ontology explicitly rejects the contention that ontological investigations should proceed by attempting to provide metaphysical explanations of certain facts (that a blade of grass and a leaf are both green, for example) and affirming the existence of the entities required by the explanation. There are no such explanations. One may explain the fact that the blade and the leaf are both green in terms of their chemical constitution or in terms of the way they both reflect light or in terms of the similar effects they have on the human sensory apparatus, but there is no such thing as a metaphysical explanation of the blade and the leaf both being green. Moreover, there must be cases in which there is no ordinary, non-metaphysical explanation of the fact that things are alike in a certain respect. Suppose, for example, that there is no scientific explanation of the fact that two electrons have the same charge. In this case, too, the metaphysical explanation makes no sense. Such an explanation can be extracted from this statement by David Lewis.

> [Consider] two particles each having unit positive charge. Each one contains a non-spatiotemporal part corresponding to charge. [It is a universal and] the same universal for both particles. One and the same universal recurs; it is multiply located; it is wholly present in both particles, a shared common part whereby the two particles overlap. Being alike by sharing a universal is 'having something in common' in an absolutely literal sense.

If this is right, then an electron has a physical quantity as a part. (A physical quantity Lewis would call 'unit negative charge' and I will call 'the charge on the electron'.) And physical quantities can be multiplied by numbers and by other physical quantities. For example:

$$\pi \times \text{the charge on the electron} = -5.033386343127623 \times 10^{-19} \text{ coulombs}$$

$$\begin{gathered}((\text{the charge on the electron})^2 \div (1 \text{ nanometer})^2\,) \\ \times \\ \text{Coulomb's constant} \\ = \end{gathered}$$

the magnitude of the repulsive force one electron exerts on another if they are 1 nanometer apart.

I can make no sense of the idea that an entity that can be a subtrahend, a multiplicand, and a divisor can be a constituent of a physical thing.

But if objects with certain properties are postulated in the course of providing a metaphysical explanation of a certain fact, and if the idea of such an explanation makes no sense, it is not surprising that the idea of an object that has those properties makes no sense.

2. Metaphysical reasoning has convinced me that every role a Quinean analysis of our discourse uncovers can be played by objects of one or the other of these two kinds:

—objects to which the following descriptions apply: ‘abstract object’, ‘relation’, ‘anetiological or non-causal object’, ‘universal’.

—objects to which the following descriptions apply: ‘substance’, ‘concrete object’, ‘causal object’, ‘particular’, ‘individual’.

Lightweight Platonism is essentially the union of a Quinean meta-ontology with the thesis that the only abstract objects are relations (propositions being considered to be 0-term relations and properties 1-term relations.)

Philosophers have affirmed the existence and made use of objects of many other kinds than these. Among them are

—states (mental and physical)
—tropes
—immanent universals
—bare particulars
—mathematical entities
—events.

I would deal with the philosophical problems that Lightweight Platonism faces because it fails to affirm the existence of the items in this list in various ways. A failure to countenance the existence of tropes and immanent universals and bare particulars is no embarrassment for Lightweight Platonism, for there are no such things. But Lightweight Platonism’s denial of the existence of events is much more serious. It commits the Lightweight Platonist to the onerous task of finding paraphrases for sentences like, ‘The sequence of events leading up to the Challenger disaster is now well documented’.

The Lightweight Platonist identifies “states” with properties—an identification with the odd but defensible consequence that your and my current mental states existed when dinosaurs roamed the earth and would have existed if you and I hadn’t, and if no living thing had ever, existed.

If the work done by mathematical entities cannot be assigned to relations, Lightweight Platonism is obviously not an acceptable ontology. In the case of the work done by mathematical entities of many kinds, there is an embarrassment of riches. The number 1, for example, can be identified with the relation "the *x*s are exactly 1 in number," the number 2 with the relation "the *x*s are exactly 2 in number," and so on.

3. Sets are the most difficult of the mathematical objects to do without. The problem cannot be solved by adopting a nominal-variable analogue of Russell's "no class" theory. Such a theory would tell us how to eliminate sentences of the form '$\mathrm{G}\{x|\mathrm{F}x\}$' from our discourse. What we need, however, is a way to eliminate sentences of the forms '*x* is a set' and '$x \in y$' from our discourse.

I propose that we assume that everything has exactly one haecceity, and that, for any *x*s, if those *x*s are haecceities, at most one property is a disjunction of the *x*s. If we assign any one impossible property *N* to play the role of the empty set (non-self-identity, for example), we may replace '*x* is a set' with

> $x = N \vee$ for some *y*s (the *y*s are haecceities & $\forall z$ (*z* is one of the *y*s $\rightarrow \exists w\, w$ has *z*) & *x* is a disjunction of the *y*s),

and '$x \in y$' with

> For some *z*s, (the *z*s are haecceities & $\forall w$ (*w* is one of the *z*s $\rightarrow \exists v\, v$ has *w*) & *y* is a disjunction of the *z*s & *x* has *y*).

Essentially, this alternative to set theory replaces (non-empty) sets with disjunctions of instantiated haecceities. (The counterpart to Russell's Paradox is: A contradiction can be deduced from the premise that just any haecceities have a disjunction.)

Those who adopt this alternative will find that they do not face questions about the empty set or about unit sets. The empty set, or its analogue in this alternative, is simply the impossible property *N*, and Socrates' unit set or singleton is his haecceity. Moreover, they will find that the analogue of the argument

> Ontological grounding is real, for Socrates and {Socrates} exist in the same possible worlds, but {Socrates} depends for its existence on Socrates and Socrates does not depend for his existence on {Socrates}

makes no appeal to them—for that analogue is

> Ontological grounding is real, for Socrates and Socrateity exist in the same possible worlds, but Socrateity depends for its existence on Socrates and Socrates does not depend for his existence on Socrateity,

and both 'Socrates and Socrateity exist in the same possible worlds' and 'Socrateity depends for its existence on Socrates' are false. Socrateity is the analogue of {Socrates} only in worlds in which it instantiated.

4. Lightweight Platonism is a lightweight platonism because the *universalia ante res* whose existence it affirms are without causal powers. According to the criterion of the Eleatic Stranger (*Sophist*, 247E), they are not real things at all. It is not clear whether there is any sense to be found in speaking of anything that really exists as "not real." And I do insist that universals (or relations or abstract objects) really exist. By contrast the Forms of the heavyweight Platonism of Plato confer on things their proper natures and their persistence in those natures. The abstract objects of Lightweight Platonism are devoid of causal powers and for that reason they explain nothing. Of course they *figure in* explanations, just as numbers figure in (e.g.) applications of the square-cube law.

Reality, then, is divided into two radically different parts. One part comprises things that move other things and are moved by them, and the other things to which the concepts of motion and cause and change do not apply. I wish it were not so, but if I were to affirm that there were no such things, I should contradict myself

# I

# Being and Existence

**1.** Ontology is a very old subject, but 'ontology' is a relatively new word. (*Ontologia* seems to have been a seventeenth-century coinage.[1]) The word is currently very much in fashion, both among analytical philosophers and philosophers in the existential-phenomenological tradition. (Few philosophers these days would be willing to identify themselves as phenomenologists and even fewer as existentialists. By a philosopher "in the existential-phenomenological tradition," I mean a philosopher who regards Husserl and Heidegger as far more important figures in the history than, say, Frege and Russell.) Its popularity among analytical philosophers is due almost entirely to Quine, and its popularity with, well, with the philosophers of the other tradition, is due to Heidegger—or if not to Heidegger alone, then more to Heidegger than to any other thinker.[2]

Quine uses 'ontology' as a name for the study that attempts to answer the "ontological question": What is there? Quine's conception of this study (which is the main topic of this chapter) belongs to an identifiable tradition in the history of thinking about being. Most analytical philosophers would probably point to Kant and Frege and Russell as Quine's most important predecessors in that tradition, and would probably find its roots in Kant's contention that being is "manifestly not a real predicate."[3] Heidegger and his followers, however, see the tradition Quine represents—but they would be unlikely to identify it by reference to Quine—as much older and more pervasive. (So pervasive, in fact, as to have been for a long time now the *only* tradition, its adherents being no more aware of it than a fish is of water.) According to Heidegger, who takes Hegel to mark the point of its highest development, this tradition may be summarized in three theses, which he describes as "prejudices":

—Being is universal. (That is, being is the only category such that nothing could possibly fall outside it.)

—Being is indefinable. (Since there is no more general category than being, and *definitio fit per genus proximum et differentiam specificam*.)

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[1] See the article by Alasdair Macintyre, "Ontology" in *The Encyclopedia of Philosophy*.

[2] For a discussion of another tradition in twentieth-century philosophy that has appropriated the term 'ontology' to its philosophical concerns, see the discussion of "B-ontology" in the Introduction to Peter van Inwagen, *Ontology, Identity, and Modality: Essays in Metaphysics*.

[3] "Sein *ist offenbar kein reales Prädikat*"—*KdRV*, A 598/B 626.

*Being: A Study in Ontology*. Peter van Inwagen, Oxford University Press. © Peter van Inwagen 2023.
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—Being is self-explanatory. (Since an understanding of being pervades all our judgments, we understand being if we understand anything at all.)

(This summary is itself summarized in an incidental remark of Hegel's: Being is the "very poorest and most abstract of all categories.") For Heidegger, the word '*Ontologie*' represents a confrontation with this tradition. The task of "(fundamental) ontology" is to lead us back to the question, 'What is being?', to enable us actually to *ask* this question. For, owing to the current pervasiveness, the utter inescapability, of the view of being embodied in the "prejudices," we are unable to ask it, since we lack the requisite concepts and habits of thought. Indeed, the tradition embodies, as one might say, a self-fulfilling prophecy: the word *being* is now empty in just the way the tradition says it is. The emptiness of being is an artifact of philosophy. It is, however, possible for us to come to realize this and to attempt to remedy the situation. The remedy is "ontology" (or "fundamental ontology"). For Heidegger, ontology is a partly phenomenological and a partly historical study. That is, phenomenological and historical investigation can each provide us with the materials for a re-opening of the question of being. Phenomenology can re-open the question of being, because, although the *word* 'being' has lost its meaning, what the Greeks were enquiring about under the rubric *to on* (before Plato led them astray) is present as an essential ingredient in the lives and thinking and works of human beings and thus can be investigated phenomenologically. And, of course, since our present forgetfulness of being is the outcome of an historical process, there is the possibility that we may be able to work our way back through the history of thinking—with, as Milton says, "backward mutters of dissevering power,"—to a point at which the question of being once more becomes open to us.

It is this sort of study that Heidegger calls "ontological." To ontological studies he opposes "ontic" studies, studies whose objects are beings, but not beings considered as *beings*, things that *are*, but only beings considered as representatives of some particular category such as "material object" or "knowing subject" or "theoretical entity." Materialists, for example, tell us that there *are* only material objects, and tell us, perhaps, how to reduce things like thoughts that apparently belong to other categories to things in their favored category, but they tell us nothing about this "are" of which that category is the only representative. (We might compare Heidegger's disdain for the unreflectiveness of "merely ontic" thinkers to the disdain some early twentieth-century moral philosophers felt for the unreflective ethical thinking of victims of "the naturalistic fallacy." Materialists say that all the things that there are are material. But, surely, their position is not that 'a material thing' and 'a thing that is' are identical in meaning; they are not, one supposes, telling us that all material things are material things or that all the things that there are are things that there are. But what, then, is the *meaning* of this phrase 'things that there are' whose extension is, they say, identical with the extension of 'material things'? They do not say. They do not know that there is anything *to* say.)

What Quine calls 'the ontological question' ('What is there?') Heidegger would dismiss as merely the most general ontic question. It is true that Quine has said something that could be construed as an answer to the question, 'What is being?': "To be is to be the value of a bound variable." But, from a Heideggerian point of view, this "answer" is merely a refinement of the first of the three prejudices that define the tradition of the forgetfulness of being. It is not an answer to the question but to the parody of the question that our obliviousness of being has left us with. (This obliviousness is nicely illustrated by Descartes's use of the figure of the "tree of the sciences,"[4] the roots of which are metaphysics—the most general ontic study, the study productive of theses like materialism and idealism—, the trunk of which is physics, and the branches of which are the special sciences. But the roots of a real, living tree must be embedded in something. The fact that Descartes did not think it necessary to fill in the part of his figure corresponding to that aspect of a real tree suggests that—despite his being the inventor of the argument that Kant would later call 'the ontological proof'—it had never occurred to him to ask whether there was a study that did not stop with discourse about particular *sorts* of beings like mental and material substances.)

This book is written from within the tradition that Heidegger proposed to overcome. In a way it is an answer to Heidegger. (But it is not a "thematic" answer: although I shall make some remarks about Heidegger at various points, explicit criticism of his work is not my purpose—nor am I competent to engage in systematic reflection on his philosophy.) This book seeks to demonstrate that the tradition is, or can be, fully self-conscious. That is, the tradition can be fully aware of, and able to articulate, its presuppositions. It can, in fact, be better aware of and better able to articulate its presuppositions than Heidegger was his. It is my position that the questions Heidegger wishes to make once more available to us were never really there, and that a philosopher working within the tradition Heidegger deprecates, and commanding thereby a deeper understanding of being than Heidegger had available to him, will be able to see this with perfect clarity.[5]

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[4] In his introduction to *Les principes de la philosophie*, the French translation of his *Principia philosophiae*.

[5] The serious student of Heidegger's philosophy will see that my knowledge of Heidegger is superficial. It is based mainly on English translations of the Introduction to *Sein und Zeit*, of *Einfürung in die Metaphysik*; of the introduction ("Der Rückgang in den Grund der Metaphysik") to the lecture "Was ist Metaphysik?"; and of "Kants These über das Sein." I have not attempted to make any distinction between "the Heidegger of *Sein und Zeit*," "the Heidegger of the thirties (the author of 'On the Way Back into the Ground of Metaphysics')," and "late Heidegger." I nevertheless make no apology for the sentence to which this note is attached or for the paragraph of which that sentence is the conclusion. It is my view that Heidegger's philosophy of being is so transparently confused that no profound knowledge of his writings is a prerequisite for making judgments of the sort that paragraph contains. I must remind the reader that these judgments

In the present chapter, I elaborate the traditional answer to the question, What is being? An important part of this elaboration of the traditional answer will take the form of an account of quantification. In Chapters II, III, and IV, I shall apply the account of quantification presented in Chapter I to three questions about what there is: Are there things that do not exist?; Are there abstract objects?; Are there objects of the sorts that figure in current discussion of modality (possible worlds and non-actual or merely possible individuals)? In Chapter V, I shall examine some rivals to the account of quantification presented in Chapter I, accounts of quantification that (if correct) undermine the arguments of Chapters II, III, and IV.

We may say that while the subject of Chapters II, III, and IV is "ontology proper," the subject of the present chapter and Chapter V is "meta-ontology." (The distinction I draw between meta-ontological and properly ontological questions corresponds roughly to Heidegger's distinction between ontological and ontic questions.)

The meta-ontology presented in this chapter is broadly Quinean. I am, in fact, willing to call it an exposition of Quine's meta-ontology.[6] (In Chapter V, I shall examine some rivals to Quine's meta-ontology.) We must distinguish Quine's meta-ontology from his ontology proper. His meta-ontology comprises such propositions as his theses on quantification and ontological commitment. His ontology comprises such propositions as the proposition that there are sets and the proposition that there are no propositions.

Quine's meta-ontology may be formulated as a fairly short list of theses: about five, depending on how one divides them up. Let us say five. Some of the theses I shall list have never been explicitly stated by Quine—the first in the list certainly has not—, but am sure he would accept all five. (While there is no exact match, the reader may find it instructive to compare this list with Heidegger's list of traditional prejudices.)

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apply to Heidegger's philosophy of being (*Sein*) and not to his philosophy of "us" (*Dasein*). It may be that there is much of philosophical value in Heidegger's investigations of *Dasein*. If so, I would nevertheless insist, what is valuable in these investigations will better reveal its value if his philosophical vocabulary is "de-ontologized," if they are rewritten in such a way that all occurrences of words related to *Sein* (including *Dasein* itself) and *Existenz* are replaced with "non-ontological" words. (I have no doubt that all committed students of Heidegger will tell me that it is impossible to "de-ontologize" Heidegger's investigations of *Dasein*. They may be wrong. If they are right, however, Heidegger's investigations of *Dasein* are irremediably vitiated by the radical confusions that are an essential component of his philosophy of *Sein*.)

[6] See W. V. Quine, "On What There Is," *Word and Object*, particularly chapters V and VII, "Nominalism," "Ontological Relativity," and "Existence and Quantification".

2. Thesis 1: *Being is not an activity*. What J. L. Austin said of 'exist'—we shall consider the relation between 'exist' and 'be' presently—, he might equally well have said of 'be': "The word is a verb, but it does not describe something that things do all the time, like breathing, only quieter—ticking over, as it were, in a metaphysical sort of way."[7] In order to understand what we are denying, let us try to understand those who accept, or talk as if they accepted, what we are denying. Let us try to get into their minds.

Some activities are more general than others. What am I doing now? I am writing. I am writing a philosophical book. These are both answers to the question 'What am I doing now?', but the correctness of the latter entails the correctness of the former, and the correctness of the former does not entail the correctness of the latter. What is the tree doing? It is living. It is putting out roots. (Perhaps it sounds queer to use 'living' and 'putting out roots' as names for "activities." But I need some word to cover the processes of change—and unchange—that things undergo. I call them activities, and I use the word 'do' as the most general verb of change and unchange.) What is the candle doing? It is changing its shape. It is burning down.

Let us say that an activity A is *more general than* an activity B if a thing's engaging in B entails its engaging in A and the converse entailment does not hold.

We may ask with respect to each thing (or, at least, with respect to each thing that engages in any activity) whether there is a most general activity it engages in: an activity it engages in in virtue of engaging in any activity at all. If I understand them correctly, many representatives of the existential-phenomenological tradition would answer Yes; they would call this activity the thing's "being" or "existence."

We may also ask whether there is a most general activity *simpliciter*, an activity things engage in in virtue of engaging in any activity at all. At least some representatives of the existential-phenomenological tradition would, I believe, answer No. As I interpret Sartre, for example, he would say that your and my most general activity (*être pour-soi*) is not the same as the most general activity of a table (*être en-soi*). (Heidegger is a more difficult case, but there is something to be said for the thesis that he would contend that there is a most general activity—*Existenz*—engaged in by *Dasein*, an activity not engaged by beings that are incapable of reflecting on themselves and their relation to contingency and time and non-being.)

Thus Sartre can say that the table and I have different kinds of *être*, since the most general thing the table does (just standing there; undergoing externally induced modifications) is not the most general thing I do (being conscious of and choosing among alternative possibilities; acting for an end I have chosen from a motive I have created). There is no God, Sartre contends, for precisely the reason that God's being would be an impossible amalgam of *être en-soi* (God is immutable and eternal) and *être pour-soi* (God is a free, conscious agent).

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[7] J. L. Austin, *Sense and Sensibilia* p. 68 *n*.

I do not wish to deny that there is a most general activity that I engage in. I suppose that if I had to put a name to it, I would call it 'lasting' or 'enduring' or 'getting older'. But I would differ from Sartre on two points, as, I think, a great many philosophers in the analytical tradition would. First, I would say that I share this most general activity with everything—or at least with every concrete inhabitant of the natural world. Secondly, I would say that it is just wrong to call this activity 'existing' or 'being' or '*être*' or to apply to it any word containing a root related to '*être*' or '*esse*' or '*existere*' or '*to on*' or '*einai*' or '*Sein*' or 'be' or 'am' or 'is'.

I cannot say that "lasting" or "enduring" has nothing to do with being, for everything *is*, and being therefore has a great deal to do with everything. But, in my view, enduring is no *more* intimately connected with being than are color or shape or the capacity for mathematical reasoning or the ability to ride a bicycle—for the plain reason (as Newman said in another connection) that one idea is not another idea.

There is, of course, a vast difference between free, conscious agents like ourselves and mere inanimate objects. I believe this quite as firmly as Sartre does.[8] But to insist, as I do, that this difference does not consist in the one sort of thing's having a different sort of being from the other's is not to depreciate it.[9] The vast difference between me and a table does not consist in our having vastly different sorts of being (*Dasein*, *dass sein*, "that it is"[10]); it consists rather in our having vastly different sorts of *nature* (*Wesen*, *was sein*, "what it is"). If you prefer, what the table and I are *like* is vastly different. This is a perfectly trivial thing to say: that a vast difference between A and B must consist in a vast difference in their natures. But if a distinction can be made between a thing's being and its nature, this trivial truth is in competition with a certain statable falsehood.

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[8] In fact, as readers of my book *Material Beings* will know, in one way I see the difference between ourselves and inanimate objects as "vaster" than even Sartre does, for I think that (although there are such things as ourselves) there are no inanimate objects—or at any rate no large, visible ones like artifacts or boulders. But if I *did* think that there were artifacts and boulders I *should* think that they were vastly different from ourselves. And I do think that there are beetles and oysters, and, like Sartre, I think that such mindless, non-sentient organisms are vastly different from ourselves. (I can think of only two differences that are "vaster" than the difference between mindless organisms and rational organisms: the difference between Creator and creature and the difference between abstract things and concrete things.)

[9] It is not my present purpose in any way to dispute Sartre's theory of the nature of conscious, acting beings; it may well be that the essentials of his theory could survive translation into a vocabulary that made no reference to being or existence. This remark is parallel to my remark in note 5 about the possibility of "de-ontologizing" Heidegger's investigation of *Dasein*.

[10] I confess that only a few writers say that '*Dasein*' is derived from 'dass sein' or 'daß sein' (e.g., David Krell, *Martin Heidegger: Basic Writings* p. 48, footnote). The word is commonly said to be derived from '*da sein*'; '*da*' means '*there*' or '*here*'.

And if one denies the trivial at the outset of one's investigations, there is no hope for one later on.[11]

Sartre and Heidegger and all other members of the existential-phenomenological tradition are, if I am right, guilty of ascribing to the "being" of things features of those things that should properly be ascribed to their natures. That is why they deny that being is the poorest and most abstract of all categories. That is why they have, so to speak, a "thick" conception of being—as opposed to the "thin" conception of being that I believe to be the correct conception of being.[12]

Those who have a "thick" conception of being will no doubt regard what I have said (and all that I shall say) as *jejune* and simplistic. I cannot hope to convert them to an allegiance to a thin conception of being. But I will say something to anyone who may be hesitating between adopting a thick and a thin conception of being.

Let us consider the Martians. The Martians (this fact deserves to be more widely known among philosophers) have only one language, a language that is very much like English, but with this difference: certain common words and phrases of English are not to be found in Martian. There are in Martian no mass terms corresponding to any English word derived from 'be' or '*esse*' or '*existere*' or '*to on*'. In particular, Martian lacks the mass terms 'being' and 'existence'. (The count-noun 'being' does occur in the Martian lexicon, but only in such phrases as 'a human being', 'a rational being', and 'an omnipotent being'.) The Martian lexicon includes a verb 'to be', but this verb can express only predication and identity. (And, therefore, its present participle occurs only in contexts like 'being of sound mind, I set out my last will and testament' and 'being John Malkovich'.) There is, moreover, no such verb in Martian as 'to exist' and no adjectives like 'existent' or 'extant'—and, of course, no such adjective as 'non-existent'. Why, the Martians do not even have the phrases 'there is' and 'there are'—and not because they use some alternative idiom like 'it has there' or 'it gives' in their place. (Nor do they have the quantifiers 'something' and 'nothing'.) And, finally, they have no count-nouns that apply to absolutely everything—words like 'thing' and 'entity' and 'object'. (They have, as noted, the noun 'being' but a Martian philosopher would say, and rightly, that the statement that "mathematicals"—what a human philosopher might call mathematical objects—were "beings" was a category error.)

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[11] The confusion of ascribing to a thing's being what properly belongs to its nature is not confined to the existential-phenomenological tradition. See, for example, the opening sentence and the closing paragraphs of chapter IX ("The World of Universals") of Russell's *The Problems of Philosophy*.

[12] I owe the phrases "thin conception of being" and "thick conception of being" to Professor Wilfried VerEecke.

How do the Martians manage without any words of the sort we English speakers might describe as "words for talking about existence and being"? They manage quite well, thank you. Let us consider some examples. Where speakers of English say, "Dragons do not exist," speakers of Martian say, "Everything is not a dragon." ('Everything' is the sole quantifier of Martian.) Anglophone theists say, "God exists" or "There is a God," but areophone theists say, "It is not the case that everything is not (a) God." The counterpart of Descartes in the history of Martian philosophy famously said, "I think, therefore not everything is not I." Martian mathematical realists say, "Not everything is not a mathematical." The best Martian translation of 'It makes me strangely uneasy to contemplate the fact that I might never have existed' is 'It makes me strangely uneasy to contemplate the fact that it might have been the case that everything was always not I'; the best Martian translation of 'It makes me strangely uneasy to contemplate the fact that someday I shall not exist but a world will still exist' is 'It makes me strangely uneasy to contemplate the fact that someday it will be the case that everything is not I but not the case that everything is not (identical with) anything'. Where English speakers say, "It is a great mystery why there should be anything at all," speakers of Martian say, "It is a great mystery why it is not the case that everything is not (identical with) anything."

Is there anything we can say or think that the Martians cannot say or think? I find it plausible to suppose that there is not.[13] It seems to me to be evident that no work of "fundamental ontology" in the Continental style (*Sein und Zeit*, for example) could be translated into Martian. But if the Martians can say everything we can say, it must be that works of "fundamental ontology" consist in large part of sentences that do not succeed in saying anything, sentences that are only words. Perhaps the following two examples will illustrate my point.

Consider, first, Heidegger's notorious sentence, '*Das Nichts nichtet*'. Is there any way to translate this sentence into Martian? It seems to me that there is not. The thing simply can't be done. I invite the reader to try.

Consider, secondly, the sentence (which is supposed somehow to be found in fragment 2 of Parmenides' cosmological poem, though I don't see it there myself): 'Being is; not being is not'. This sentence can only doubtfully be translated into

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[13] Meinongians (who say that there are things such that there are no such things) and neo-Meinongians (who say that there are things that do not exist) will disagree. (Suppose the Queen of Mars is studying English. She says, "I think I'm getting the hang of this verb 'to exist'. When you people say, 'Dragons do not exist' that just means 'Everything is not a dragon'." A terrestrial philosopher replies, "No, Your Majesty, that's not right. For dragons *don't* exist, but Fafnir *is* a dragon, so it's not true that everything is not a dragon." This will simply puzzle her. She will respond to this statement in some such words as these: "But surely everything is not Fafnir. In your idiom, Fafnir does not exist or there is no Fafnir. If you labeled everything, everything would lack the label 'Fafnir'.") We shall consider Meinongianism and neo-Meinongianism briefly in this chapter and at greater length in Chapter II. For the moment, let us say that if there are no things that aren't and if there are no things that do not exist, then it seems plausible to suppose that there is nothing we can say that the Martians can't. (Certainly a "thick conception of being" in no way depends on an allegiance to Meinongianism.)

Martian. That is, although there *are* possible translations (no fewer than four), I'm fairly sure that if Parmenides were returned to life and taught English and did maintain that 'Being is; not being is not' was a fair representation of one of his theses, he would say that none of these "possible translations" expressed that thesis. I will not burden the reader with four lengthy Martian translations of 'Being is'. I will rather remark that the four Martian sentences I have in mind are the Martian equivalents of the following four English sentences: (i) Everything that is is, (ii) Everything is, (iii) Something is, and (iv) The attribute *being* is. (And similarly for 'Not being is not': Everything that is not is not; It is false that everything is not; It is false that something is not; The attribute *not-being* is not.) The Martians would regard the first two sentences in each group as logical truths and the third in each group as, if not a logical truth, at any rate as obviously true. Whether a Martian regarded the fourth sentence in either group as true or false would depend on that Martian's ontology of attributes or properties—and Martian opinion on the matter of nominalism and realism is as various as terrestrial opinion.

Whatever a resurrected Parmenides might say, I am fairly certain that any present-day philosopher who supposed that the sentences 'Being is' and 'Not being is not' expressed propositions that Parmenides had affirmed would deny that those propositions were the propositions expressed by any of the translatable-into-Martian English sentences set out in the previous paragraph.

These two examples (and I could offer many others) raise an important question: Is Martian a kind of ontological Newspeak, a language in which certain thoughts simply cannot be expressed (and no wonder, for it's a language invented by someone—myself—who very badly wants to believe that there are no such thoughts), or is it a language whose ontological clarity makes certain semantical delusions impossible for its speakers?

This is a question that any philosophers "who may be hesitating between adopting a thick and a thin conception of being" must answer for themselves.

Thesis 2: *Being is the same as existence.* Many philosophers distinguish between being and existence.[14] That is, they distinguish between what is expressed by sentences like 'There are dogs' and 'There was such a person as Homer', on the one hand, and 'Dogs exist' and 'Homer existed' on the other. I have chosen 'being' and 'existence' as the abstract nouns that represent the terms of the distinction these philosophers want to make. Perhaps this is a bad choice of words. My choice of 'being' for this purpose could certainly be faulted as parochial. In English, in expressing the proposition that there are dogs, one uses a form of the verb 'to be' and likewise in Latin (*sunt*) and Greek (*eisín*). In French, however, one uses '*il y a*' and in German '*es gibt*'.[15] But the distinction is made, and I need some way to refer to it in the material mode.

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[14] See, for example, Terence Parsons, *Nonexistent Objects*.

Following Quine, I deny that there is any substance to the distinction: to say that dogs exist is to say that there are dogs, and to say that Homer existed is to say that there was such a person as Homer. In general, to say that things of a certain sort exist and to say that there are things of that sort is to say the same thing. To say of a particular individual that it exists is to say that there is such a thing as that individual. (Talk of the existence of particular individuals may be suspect; but, if that is so, talk of the being of particular individuals is suspect, and for the same reasons.) These things may seem obvious, but on reflection they can seem less obvious. Suppose I am discussing someone's delusions and I say, "There are a lot of things he believes in that do not exist." On the face of it, I appear to be saying that there are things—the poison in his drink, his uncle's malice, and so on—that do not exist. To take a rather more metaphysical example, I have read a letter to the editor of a newspaper, the author of which presents what he intends to be a *reductio* of the argument that abortion is wrong because it deprives unborn persons of life: those who are opposed to abortion on this ground ought to be even more strongly opposed to contraception, since abortion deprives unborn persons only of the *remainder* of their lives, while contraception deprives unconceived persons of the *whole* of their lives, of their very existence. Whatever one may think about this argument, it is clear that one of its premises is there *are* unconceived people, people who might have existed but who, owing to various acts of contraception, do not exist: people waiting in the existential wings, as it were. Perhaps someone who reflects on these examples will conclude that it is not obvious that to be is the same as to exist. But whether or not it is obvious, it is true. There *is* no non-existent poison in the paranoid's drink. There *are* no unconceived people. (And, therefore, there is no one whom contraception has deprived of existence.) In sum, there are no things that do not exist. This thesis seems to me to be so obvious that I have difficulty in seeing how to argue for it. I can say only this: if you think there are things that do not exist, give me an example of one. The right response to your example will be either, "That does too exist," or "There is no such thing as that." (In Chapter II, we shall look at various attempts to give examples of non-existent things.)

Since I know of no way of arguing for the identity of being and existence (other than a case-by-case examination and refutation of all known attempts to give examples of non-existent objects), I shall have to try to find some means other than argument of persuading you to see things as I do. I will tell you a funny story. At least I think it's funny. But I expect that if you think there is an important difference between 'there is' and 'exists', you will find the story more annoying than funny. (This expectation is grounded on a certain amount of empirical evidence: W. V. Quine thought the story was funny[16] and Terence Parsons thought it was annoying.[17])

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[15] It is nevertheless clear that in French, '*être*' is the abstract noun for what is expressed by '*il y a*' and that in German, '*Sein*' is the abstract noun for what is expressed by '*es gibt*'.

One day my friend Wyman told me that there was a passage in volume IV of Meinong's *Gesamtausgabe* in which Meinong admitted that his theory of objects was inconsistent. (She was, she said, certain that it was in the upper-left-hand corner of a page about one third of the way into the volume.) Four hours later, after considerable fruitless searching, I stamped into Wyman's study and informed her with some heat that there was no such passage. "Ah," said Wyman, "you're wrong. There is such a passage. After all, you were looking for it: there is something you were looking for. I think I can explain your error; while there *is* such a passage, it doesn't *exist*. Your error lay in your failure to appreciate this distinction." I was indignant.

My refusal to recognize Wyman's distinction between existence and being is simply my indignation, recollected in tranquility and generalized.[18]

Some philosophers recognize another sort of distinction between being and existence than Wyman's. Philosophers who would resolutely deny that there are unconceived children or that there was a Meinongian passage for which I was searching have nevertheless held that there is a distinction between being and existence. I have in mind philosophers who hold that the word 'exist' is applied, or should be applied to objects in one particular ontological category and to objects in that category alone—and that *there are* objects to which 'exists' does not apply. Meinong himself held this view (a view independent of the views for which he is specially notorious): he held that only spatially extended objects exist (*existieren*).[19] According to Professor Geach, a similar position was taken by Rush Rhees, who wrote that "we use the word 'exist' mainly in connection with physical objects."[20] If Meinong and Rhees are right, then it would seem that 'there is' and 'exist' do not mean the same thing, since 'there is' can obviously be applied to things in any ontological category. However this may be, the thesis that 'exist' applies only to spatial or only to physical objects is simply false. Commenting on Rhees, Geach says, "The nearest newspaper shows the contrary. 'Conditions for a durable agreement do not yet exist' and the like is the commonest currency of journalism." And this is obviously right.

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[16] So he was kind enough to say in a letter.

[17] See "Are There Nonexistent Objects?," The annoyance is expressed on p. 365.

[18] That there is a distinction between existence and being is sometimes said to be Meinong's view. Meinong holds a much more radical thesis about being than this, a view touched on in note 13. We shall consider Meinong's views on being in Chapter II.

[19] If we are willing to suppose that Meinong would have been comfortable with the present-day distinction between "abstract" and "concrete" objects, we can describe his position this way: there are two kinds of being, existence (*Existenz*), the mode of being of concrete objects and subsistence (*Bestand*), the mode of being of abstract objects. Meinong thus (in my view) is guilty of the fallacy, noted earlier, of attributing to the being of a thing what properly belongs to its nature—the fallacy of supposing that the (admittedly vast) difference between abstract and concrete objects consists not in their having vastly different natures but in their enjoying different kinds of being.

[20] See Geach's review of Rhees's *Without Answers*.

We shall return to the topic of being and existence in Chapter II, where we shall consider various proposals concerning what to do with sentences that appear to make reference to non-existent objects and appear to express truths about them.

Thesis 3: *Being is univocal.* And, we might add, since existence is the same as being, existence is univocal. Many philosophers have thought that 'there is' and 'exists' mean one thing when they are applied to material objects, and another when they are applied to, say, minds, and yet another when they are applied to (or withheld from) supernatural beings, and one more thing again when applied to abstractions like numbers or possibilities. This is evidently an extremely attractive position.[21] Undergraduates fall effortlessly into it, and it is very hard to convince anyone who subscribes to it that it is false, or even that it is not obviously true. But it is false. Perhaps the following consideration will show why it is at least not obviously true. No one would be inclined to suppose that number-words like 'six' or 'forty-three' mean different things when they are used to count objects of different sorts. The very essence of the applicability of arithmetic is that numbers may count anything: if you have written thirteen epics and I own thirteen cats, the number of your epics *is* the number of my cats. But existence is closely tied to number. To say that unicorns do not exist is to say something very much like this: the number of unicorns is zero; to say that horses exist is to say essentially this: the number of horses is *not* zero. And to say that angels or ideas or prime numbers exist is to say—more or less—that the number of angels, or of ideas, or of prime numbers is not zero.[22] The univocacy of number and the intimate connection between number and existence should convince us that there is at least very good reason to think that existence is univocal.

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[21] From the position of Meinong and Rhees on the meaning of 'exists' to this position—as regards 'exists' if not 'there is'—is a short step. When a philosopher who has held the former view finally sees that no rule of English usage is violated by statements like 'There exists a very real possibility that the recession will last till the next election' and 'No link between the attack on the World Trade Center and Saddam Hussein's regime has been shown to exist', the most natural thing for him to conclude—the position closest to his former position that accommodates this new datum—would be that when the word is applied to things like possibilities and causal links, it means something different from what it means when it is applied to tangible objects.

[22] Cf. Frege, *Foundations of Arithmetic*, "In this respect, existence is analogous to number. Affirmation of existence is in fact nothing but denial of the number nought" (p. 65). This thesis does not depend on Frege's (deservedly) controversial idea (or is it Kant's deservedly controversial idea?) that existence is a "second-level" predicate, a predicate of concepts rather than of objects. If I say, "The cardinal number of the concept *horse* is not zero," I apply the monadic predicate 'The cardinal number of the concept— is not zero' to the concept *horse*. If I say, 'The number of horses is not zero', I apply the variably polyadic predicate 'The number of—*s* is not zero' to certain concrete living animals, horses. In my view, when I say 'Horses exist' I am applying a variably polyadic predicate, '—*s* exist' to horses. I am no more speaking of the concept *horse* than I am if I say, "Horses are monogastric herbivores" or "Horses have an interesting evolutionary history." (If in speaking of applying a predicate to the concept *horse*, I have treated a concept as an object, I can reply only that I do not understand Frege's distinction between concept and object.)

To this point about numbers, we may append a similar point, which is due to Carnap,[23] about '∨' and '∃'. If I may be permitted to suppose that Carnap's point was intended to apply not only to the symbols '∨' and '∃' but to 'or' and 'there is' as well, it is this: given a complete list of names for the members of a finite class, we may replace existence-statements pertaining to members of that class with disjunctions. For example, we may replace the statement that there is a prime number between 16 and 20 with the statement that 17 is prime or 18 is prime or 19 is prime. Now we cannot suppose that 'or' means one thing when it is used to connect sentences about numbers and another when it is used to connect sentences about, say, people. (If it did, what should we do with 'Either there is no greatest prime or Euclid was wrong'?) But if 'or' means the same thing in conversations about any subject-matter, why should we suppose that 'there is', which is so intimately related to 'or', varies in meaning with the subject-matter of the sentences in which it occurs?

This argument, however, requires an important qualification. 'There is a prime number between 16 and 20' is equivalent to '17 is prime or 18 is prime or 19 is prime' only given that 17, 18, and 19 are *all* the numbers between 16 and 20. Since Carnap's point really requires an appeal to the concept "all" or "every," it would seem to have no more force than the following simpler argument: 'there is' is univocal owing to the interdefinability of 'there is' and the obviously univocal 'all'. But this is a powerful argument, for, surely, 'all' means the same in 'All natural numbers have successors and 'All Greeks are mortal'?[24]

The thesis that existence is equivocal found its most outspoken twentieth-century exponent in Ryle, who has said,

> It is perfectly proper to say, in one logical tone of voice, that there exist minds and to say, in another logical tone of voice that there exist bodies. But these expressions do not indicate two different species of existence, for 'existence' is not a generic word like 'coloured' or 'sexed'. They indicate two different senses of 'exist', somewhat as 'rising' has different senses in 'the tide is rising', 'hopes are rising', and 'the average age of death is rising'. A man would be thought to be making a poor joke who said that three things are now rising, namely the tide,

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[23] According to Leonard Linsky, Carnap made this point in conversation. I have not been able to find it in his published works. See L. Linsky, "Two Concepts of Quantification," The attribution of the point about '∨' and '∃' to Carnap is on p. 225.

[24] Strictly speaking, 'there is' cannot be defined in terms of 'all'/'every' alone; negation is also required: 'there is an F' is equivalent to 'It is not the case that everything is not an F'. (The "Martian" language I imagined earlier in this chapter—in connection with the "thin" and "thick" conceptions of being—is based on this equivalence.) But the negation-sign is, if anything, even more obviously univocal than 'all'. 'It is not the case that' does not mean one thing in a geology textbook and another in a treatise on number theory.

> hopes and the average age of death. It would be just as good or bad a joke to say that there exist prime numbers and Wednesdays and public opinions and navies; or that there exist both minds and bodies.[25]

Why does Ryle think that the philosopher who believes that 'exist' can be applied in the same sense to objects in different "logical categories" (as Ryle would say) thereby endorses the proposition that existence comes in "species"? Why should the philosopher who rejects the view that 'exist' is equivocal (like 'rising') be committed to the view that 'exist' is a "generic" word (like 'colored')? Perhaps the argument is something like the following. Consider the word 'rising'. If this word meant the same thing when it was applied to, e.g., tides and hopes, one could meaningfully compare the rising of tides and the rising of hopes. And if the rising of tides and the rising of hopes can be meaningfully compared, the result of comparing them must be the discovery that these two things are not much alike. Since tides and hopes are very different kinds of thing, the rising done by the former must be a very different kind of rising from the rising done by the latter. (Fortunately, however, we do not have to accept the absurd idea that there are species of rising or species of existence. For, Ryle assures us, 'rising' does *not* mean the same thing when it is applied to tides and hopes, and we therefore need not say that the rising done by tides is a very different kind of rising from the rising done by hopes. In fact, we *cannot* say it, just as we cannot say—"except as a joke," a standard postwar-Oxford qualification—that the banks of the Isis are banks of a very different kind from the banks in the High Street. And the case is the same with the existence of minds and the existence of bodies.)

If this is Ryle's argument for the thesis that 'exists' is a generic word if it is univocal, it does not seem to me to be a very plausible one. The argument rests on an analogy between the rising of tides and the rising of hopes (on the one hand) and the existence of minds and the existence of bodies (on the other). If this analogy is to make any sense, however, it must be that the existence of a thing is an activity of that thing (something that that thing *does*)—for "the rising of one's hopes" is a thing that one's hopes *do*, and "the rising of the tides" is something (a very different thing) that the tides *do*. I am willing to grant—but we are straining at the bounds of meaning here—that if "the existence of one's body" (or "one's body's existing") is something that one's body does, and "the existence of one's mind"/"one's mind's existing" is something that one's mind does, then these two things, the thing that one's body does and the thing that one's mind does, must be things of very different kinds. As we have seen, however, existence or existing is *not* an activity. (Or have we seen this? I have at any rate asserted it: that it is so is simply Thesis 1.) I contend, therefore, that Ryle's argument rests on a false analogy. If existence is not an activity, but is rather to be understood in terms of number, no parallel argument can be used to show that if existence is univocal, existence comes in species. The reason is simple: number is univocal and number does not come in species. We cannot, for example, derive from the premise that the word 'two' is univocal (across "logical categories") that duality or two-ness comes in species. The word 'two' means the same thing in the statements "Mars has two moons" and "Homer wrote two epics," but it does not follow that the moons of Mars exhibit one species of duality and the epics of Homer another.

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[25] *The Concept of Mind* p. 23.

The thesis of the univocacy of existence, therefore, does not imply that existence comes in species or that 'existent' is a "generic" word like 'colored' or 'sexed'. This thesis does not imply that there are or could be "species" words that stand to the generic 'existent' as 'red' and 'green' stand to 'colored' and as 'male' and 'female' stand to 'sexed'. It does not follow, however, that Ryle's main thesis is wrong—that is, his thesis that the word 'exist' is systematically ambiguous, that its meaning varies as the logical categories of the things to which it is applied vary. But *should* we accept this thesis? Why?

The passage I have quoted may be read as endorsing a second argument for the systematic ambiguity of 'exists' (an argument independent of the argument that the univocacy of 'exists' implies the false thesis that 'exists' is a generic word). We might call this second argument the "syllepsis" argument—a syllepsis being a syntactically correct expression that requires that a word or phrase it contains be simultaneously understood in two senses ("Miss Bolo went home *in* a flood of tears and a sedan chair"; "The Rich arrived *in* pairs, and also *in* Rolls-Royces"). There is, Ryle tells us, something decidedly odd about saying things of the form 'X, Y, and Z exist' when the subject terms of the assertion denote things in different logical categories. His example, you will remember, was this: "A man would be thought to be making a poor joke who said that three things are now rising, namely the tide, hopes and the average age of death. It would be just as good or bad a joke to say that there exist prime numbers and Wednesdays and public opinions and navies; or that there exist both minds and bodies." And why would it be a joke, poor or otherwise, to say that there exist both minds and bodies? Because that statement is a syllepsis, a syntactically correct sentence that requires that the word 'exist' be simultaneously understood in two senses.

The syllepsis argument, in my judgment, is wholly without merit. There are two reasons why it sounds odd to say, "There exist prime numbers and Wednesdays and public opinions and navies," and they have nothing to do with fact that someone who said this odd thing would be applying 'exist' to objects in different logical categories. For one thing, 'There exist Wednesdays' and 'There exist public opinions' sound pretty odd all by themselves (surely 'public opinion' is a mass term and thus can't be pluralized?). Secondly, it is hard to think of any excuse for mentioning all these items in one sentence, no matter what one might say about them. I invite you to try to devise a sentence about prime numbers and Wednesdays and public opinions and navies that does *not* sound odd. (Well, there's one and perhaps it doesn't sound odd; but my sentence avoided oddness only by, in effect, quoting and commenting on the oddness of someone else's odd list of items.)

If we restrict ourselves to just two of the items in Ryle's list, we can easily find sentences that should be odd—and odd in a particular way: sentences that should exhibit the same kind of oddness as Dickens's "Miss Bolo" sentence and Hilaire Belloc's "arrived in pairs" sentence—if he is right, but which are not odd at all. For example: 'The Prime Minister had a habit of ignoring the existence of things he didn't know how to deal with, such as public opinion and the Navy'. But we need not make up examples. Here is a real one.[26]

> In the U.S.S.R... as we know, there is a prohibition on certain words and terms, on certain phrases and on entire... parts of reality. It is considered not only impermissible but simply indecent to print certain combinations of graphemes, words, or ideas. And what is not published somehow ceases to exist.... There is much that is improper and does not exist: religion and homosexuality, bribe-taking and hunger, Jews and nude girls, dissidents and emigrants, earthquakes and volcanic eruptions, diseases and genitalia.

Later in the same essay, the author says,

> In the novel of a major Soviet prose writer who died recently the main characters are blinded and start to suffocate when the peat bogs around Moscow begin burning. The peat bog fires actually exist, but then so does Brezhnev's regime.

Or consider the following gibe by the physicist Sheldon Glashow: "Of course superstring theory is much more glamorous than the standard model. The standard model is formulated in boring, old-fashioned eighteenth-century mathematics. Superstring theory requires mathematics so new it doesn't even exist yet."[27] Can anyone suppose that 'exist' in this remark means something different from what it means in the following imaginary but exactly parallel joke: 'The lab equipment described in our rivals' grant proposal is so new it doesn't even exist yet'? I conclude that Ryle has made no case for the thesis that existence is equivocal.[28]

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[26] Tomas Venclova, "The Game of the Soviet Censor," *New York Review of Books*, 31 March 1983. The two quoted passages occur on pp. 34 and 35. (Venclova is a Lithuanian poet and scholar. In 1983 he was what in that remote year was called a Soviet dissident.)

[27] I quote from memory. I cannot now remember where I came across this remark. I apologize to Professor Glashow if I have misquoted him.

[28] Morton White has contended (*Toward Reunion in Philosophy* pp. 60–80) that Ryle's arguments about the relation between mind and body do not actually require multivocalism about being and existence. This may very well be true. It is not a part of my present project to attack Ryle's philosophy of mind. (Cf. my earlier remarks about Heidegger and Sartre.) As a general rule, I think it is a mistake for philosophers whose interests lie in the area of human subjectivity to introduce vocabulary or ideas borrowed from ontology into their researches in this area.

I will consider one other argument for the conclusion that 'there is' and 'exists' are used in many senses, an argument presented in Hilary Putnam's *Ethics without Ontology*.[29] In this book, Putnam contends that Quine's approach to ontological questions rests on a mistake—the mistake of assuming that 'there is' has only one sense. (If we assume this, Putnam says, 'we are already wandering in Cloud Cuckoo Land'.) Consider, for example, universals—properties or attributes. According to Putnam, we can if we like, if we find it useful to do so, adopt a *convention* to the effect that phrases like 'whiteness' and 'malleability' denote objects. If we do this, we are deciding to adopt a *conventionally extended* sense of 'there is' according to which this phrase applies to universals. A debate about whether there *really are* universals (or any of the other things whose existence is debated by philosophers engaged in "ontology": mathematical objects, propositions, unrealized possibilities, . . .) is as silly as a debate about whether 0 meters per second *really is* a speed or whether a straight line-segment *really is* a special kind of ellipse or whether a corporation *really is* a person. Just as we can, by convention, extend the meanings of 'speed' or 'ellipse' or 'person' in such a way that they apply to items they did not apply to when they were used in their original or everyday senses, so we can extend the meaning of 'there is' to apply to any of the things of the sorts whose existence ontologists have wasted their time arguing about (provided only that the rules governing the new, extended sense of 'there is' can be stated without contradiction). The whole enterprise of "ontology"—at least insofar as ontology is that project whose foundational document is "On What There Is"—is an illusion that has arisen because philosophers have mistaken questions of convention ("Is it useful to adopt a convention according to which 'there are' universals?") for questions of fact ("Are there really universals?").

But why is this supposed to be true? Putnam's argument for his central thesis, the thesis that ontologists have mistaken questions of convention for questions of fact, is based on an example, the example of mereological sums or fusions.

It would, Putnam contends, be silly to debate about whether fusions—for example, the object composed (exactly) of the Nelson Column and the Arc de Triomphe—*really* exist.[30] If we find it useful to do so, we can make it *true by definition* that, for any two physical objects, there is a thing that is their fusion.

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[29] *Ethics without Ontology* contains two series of lectures. Putnam's argument is presented in the series that gives the book its title. In the Introduction to this volume, speaking of a bit of text by Jonathan Schaffer, I said, "I confess it is from a period later in the recent history of analytical metaphysics than the period to which the present 'historical document' . . . belongs." I could say the same of *Ethics without Ontology*. My defense is that Putnam's lectures did not depend on then-recent developments in philosophy; they could have been delivered twenty years earlier. The only citation of any consequence in the lectures is of Quine, "On What There Is."

[30] The debate (or pseudo-debate) Putnam is thinking of would be better described as a (pseudo-) debate about whether, for *just any* objects, those objects have a sum or fusion. Anyone who believes that there are any composite objects at all believes that *some* fusions exist. A fusion of the *x*s is an object *y*

Those who have so extended the meaning of 'there is' can say, and say truly, "There is a large stone object that is partly in London, partly in Paris, and not even partly anywhere else." Those who, for whatever reason, do not adopt the imagined definitional extension of 'there is' can say, and say truly, "There is *no* large stone object that is partly in London, partly in Paris, and not even partly anywhere else." But, in uttering these two sentences, the "extenders" and the "non-extenders" will not contradict one another, for the simple reason that they mean different things by 'there is'. (We may compare their situation with that of the principals of an example of Geach's: An American who has witnessed a fatal traffic accident says, "The dead man was lying on the pavement"; a Briton who has witnessed the same accident says, "The dead man was not lying on the pavement."[31] Their two statements are logically consistent.) And, Putnam maintains, *all* the disputes of "ontology" are of this sort: once one sees that they're not about matters of fact (like disputes about whether there is a God or whether there are stable transuranic elements or whether there is a huge cache of biological weapons somewhere in Iraq), but about matters of verbal convention, one sees that they were simply silly.

This argument seems to me to be very weak. Let us grant Putnam the premise that it's silly to debate about whether there are fusions. (I think it isn't silly, but why I think that is a rather long story.[32] I'm willing to concede that when Putnam says it's silly, he's saying something that is very plausible on the face of it.) Granted the silliness of the debate, I don't see that he's given an intelligible account of its silliness. (And, in the absence of an account of the silliness of a debate about the real existence of fusions, the silliness of that debate not an argument for the conclusion that its silly to debate about the real existence of numbers or universals; perhaps a debate about fusions is silly for some reason peculiar to fusions, a reason that does not apply to other ontological debates.) I say this because I don't see how the meaning of 'there is' can possibly be "extended by convention." I don't see what action or sequence of actions would *count* as doing that. Suppose one is contemplating extending the meaning of a term by adopting new conventions governing its use; let's say that one is contemplating extending the meaning of 'person' in such a way that corporations are to be called 'persons'. One will, presumably, contemplate such a thing only if one believes that *there is* at least one corporation for 'person' to apply to. Similarly (I should think) one will contemplate extending the meaning of 'there is' in such a way that 'there is' applies to fusions only if one believes that *there is* at least one fusion for 'there is' to apply to. But if one thinks that there is a fusion (or number or universal) for

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such that something overlaps at least one of the *x*s if and only if it overlaps *y*. If, therefore, I have proper parts, I am a fusion of my proper parts: something overlaps at least one of my proper parts if and only if it overlaps me.

[31] That is, was not lying on what the American would call the "sidewalk."

[32] For the long story, see my essay, "The Number of Things."

'there is' to apply to, one *already* thinks that 'there is' applies to at least one fusion (number, universal), and the purpose of the contemplated convention has therefore been accomplished antecedently to adopting it. Extending the meaning of a term so that that term will apply to objects beyond those it already applies to is precisely analogous to extending a geographical boundary: you can extend a geographical boundary to encompass new territory only if that territory is already there. A single, "fixed in advance" meaning for 'there is' (Putnam in several places describes the thesis he opposes as the thesis that there is a single, "fixed in advance" meaning for 'there is') seems to be a presupposition of any attempt to extend the meaning of any term by convention: you need a fixed-sense 'there is' to specify (in stating the new convention) the 'new' things that the term is to apply to.

This objection to Putnam's argument is not profound. (In the matter of profundity, it's on more or less the level of this well-known objection: "But that man isn't wearing any clothes!") Neither is it particularly original. Similar objections have been raised by several philosophers.[33] (Putnam has presented the "fusions" argument in other books; in those books he called the conclusion of his argument 'conceptual relativity', and did not explicitly contend that "conceptual relativity" implied that ontology was a province of Cloud Cuckoo Land.) He devotes pp. 39–51 of *Ethics Without Ontology* to a reply to what is essentially the above objection—introduced by the words, 'my critics typically say'. But I have to say that I don't understand the reply to the objection any better than I understand the original argument. I invite those interested in Putnam's thesis to read those pages and to decide whether they understand them. If these pages do make sense, then he's on to something (and something of considerable philosophical importance), and I've missed it because my ability to follow a philosopher's reasoning falls short of the level of comprehension required by Putnam's text (or perhaps because I am so strongly prejudiced against the idea that the meaning of 'there is' can be a matter of convention that I have managed to deceive myself into believing that Putnam isn't making sense when he's making perfect sense). And, of course, if these pages don't make sense, he's *not* on to anything. I leave it to the reader to judge.

I know of no other argument for the thesis that 'there is' and 'exists' are equivocal that is even faintly plausible. I conclude that existence is univocal, for the two clear and compelling arguments for the univocacy of existence given above (the argument from the intimate connection between number and existence and the argument from the interdefinability of the word 'exist' and the words 'all' and 'not') are unopposed.[34]

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[33] I raised an objection of the same sort in "The Number of Things." See also Ernest Sosa, "Putnam's Pragmatic Realism."

[34] Philosophers who distinguish "objectual" from "substitutional" quantification might want to maintain that 'there is' is equivocal—although in a different way from the way in which Ryle maintains that 'exists' is equivocal. One and the same person might say "in one logical tone of voice," "There are no gods or other supernatural beings" and in another, "There are several gods in the Babylonian

Thesis 4: *The single sense of being or existence is adequately captured by the existential quantifier of formal logic*. This ought to be uncontroversial. But we find people making statements like this: “Truth-conditions for quantified statements can be given without raising the question whether the objects in the domain of quantification exist. Therefore, quantification has nothing to do with existence. The term ‘the existential quantifier’ is, in fact, a misnomer. We ought to call it something else—perhaps ‘the particular quantifier’.” I am not, of course, going to agree with this contention: I do not think that there are any non-existent objects, and, therefore, I do not think that any domain of quantification could comprise non-existent objects. I would deny, moreover, that the concept of quantification has any essential connection with the concept of a domain of objects, a point to which I will return in the next section. But these matters are not the ones I want to discuss under the rubric “Thesis 4.” Rather, I want to discuss the nature of quantification. I want to give an account of quantifiers and variables as they appear from the perspective afforded by Quine’s meta-ontology. It will be clear that if this account is correct, then Thesis 4 should be no more controversial than the thesis that the ordinary sense of the “sum” of two numbers is adequately captured by the arithmetical symbol ‘+’.

3. I shall present the account of quantification that is endorsed by Quine’s meta-ontology by showing how to introduce variables and the quantifiers into our discourse as abbreviations for phrases we already understand. (This, I believe, is the *only* way—although it may be eked out by ostension—in which one can explain the meaning of any word, phrase, or idiom. I shall elaborate on and defend this point in connection with the discussion of substitutional quantification in Chapter V.) It will be evident that the quantifiers so introduced are simply a regimentation of the ‘all’ and ‘there are’ of ordinary English.

I begin by considering two ways in which count-nouns can be used. Suppose I witness the following incident: my dog Jack encounters a cat and proceeds to chase it. Immediately thereafter, I say two things. I describe the incident I have witnessed, and I go on to describe a deplorable general feature of Jack’s behavior that this incident illustrates. I say these two things (rather woodenly) by uttering these two sentences:

(1) Jack saw a cat and he chased that cat

(2) If Jack sees a cat, he chases that cat.

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pantheon who have no counterparts in the Greek pantheon.” And some philosophers would say that ‘there is’ has its objectual sense in the former sentence and its substitutional sense in the latter. We shall discuss the merits of this position in Chapter V.

When I utter sentence (1), my words ‘a cat’ and ‘that cat’ refer to a particular cat (that is, they refer to a cat: all cats are particular cats), the cat I have just seen Jack chase. When I utter sentence (2), however, my words ‘a cat’ and ‘that cat’ do not refer to (designate, denote, name) anything. (However other philosophers may use these semantical terms, I use them to mark out a relation that holds between, and only between, a term and a single object, the relation that holds between ‘π’ and the ratio of the circumference of a circle to its diameter and between ‘Paris’ and the principal city of France, and between ‘the twenty-third president of the United States’ and Benjamin Harrison.) But my use of ‘a cat’ and ‘that cat’ when I utter sentence (2) is not a case of *failure* of reference; it is not like this case: perhaps under the influence of some hallucinogen, I say, “Jack saw a unicorn, and he chased that unicorn.”

When I utter sentence (2), I (perhaps) say something true. But how can this be, given that my words ‘a cat’ and ‘that cat’ do not refer to anything? And what is the connection between the superficially identical but logically very different occurrences of ‘a cat’ and ‘that cat’ in sentences (1) and (2)? I know of no answers to these questions that are of any philosophical interest: *Si nemo ex me quaerat scio; si quaerenti explicare velim, nescio*. Nevertheless, it cannot be denied that sentence (2) is meaningful, and it cannot be denied that what it expresses could well be true.

Let us say that when I utter sentence (1), I use the words ‘a cat’ and ‘that cat’ *referentially*. (If I uttered the “unicorn” sentence, I should be using the words ‘a unicorn’ and ‘that unicorn’ referentially as well: one uses ‘an N’ and ‘that N’ referentially in cases of failure of reference.) And let us say that when I utter sentence (2), I use the words ‘a cat’ and ‘that cat’ *generally*.

In both sentence (1) and sentence (2), the phrase ‘that cat’ may be replaced by the third-person-singular pronoun:

(1*a*) Jack saw a cat and he chased it.

(2*a*) If Jack sees a cat, he chases it.

In each of these sentences, the pronoun ‘it’ inherits the logical properties of the phrase it replaces. If I uttered sentence (1*a*) in the context I have imagined, I should be using the word ‘it’ referentially, for the pronoun would refer to the cat Jack chased. If I uttered sentence (2*a*) in the context I have imagined, however, I should be using the word ‘it’ generally.

Following common usage, let us say that in both (1*a*) and (2*a*), ‘a cat’ is the *antecedent* of the pronoun ‘it’. As a sort of first approximation to the truth, we may say that every occurrence of the third-person singular pronoun requires an antecedent—although that antecedent need not be, and often is not, in the same sentence. (“As a sort of first approximation to the truth”—there are lots of real or apparent exceptions to this rule: 'Jack thinks it's a sin not to chase cats'; 'It can't be disputed that Jack chases cats'; 'If it's feline, Jack chases it' . . . . I do not propose to try to sort these out.) But in sentences that are more complex than (1*a*) and (2*a*), it will not always be clear what the antecedent of a particular occurrence of 'it' is. For example:

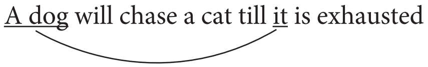
A dog will chase a cat till it is exhausted

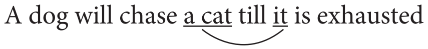
If a cat and a dog live in the same house, it will sometimes grow fond of it.

It is evident that these sentences are ambiguous. There are various ways to remove this kind of ambiguity. Here is a familiar and unlovely device:

A dog will chase a cat till (the dog) it is exhausted.

Quine has suggested a more elegant solution to the problem—what I have called 'Quine bonds':





Still another way of resolving such ambiguities would be to attach some sort of label to some of or all the phrases that could be antecedents of the various occurrences of the third-person-singular pronoun in a sentence (or larger piece of discourse) and to attach to each occurrence of 'it' the same label as its intended antecedent. This is the way that I shall adopt.

If we are interested only in written language, subscripts are handy labels:

A dog$_1$ will chase a cat till it$_1$ is exhausted
A dog will chase a cat$_1$ till it$_1$ is exhausted
If a cat$_x$ and a dog$_y$ live in the same house, it$_x$ will sometimes grow fond of it$_y$
If a cat$_x$ and a dog$_y$ live in the same house, it$_y$ will sometimes grow fond of it$_x$.

If we associate occurrences of the third-person-singular pronouns with their antecedents by this method, we have come very close to introducing variables into our language, for the way occurrences of variables function and the way occurrences of the third-person-singular pronoun function—when they function "generally"—are essentially the same. The main, and the only important, difference between variables and the third-person-singular pronoun (when it is functioning "generally") is this: there is only one (all-purpose) third-person-singular pronoun, and there are lots of variables.[35]

If we have come close to introducing variables, however, we have come less close to introducing the universal quantifier, for what we have in the above examples is more like a special-purpose universal quantifier for cats and another for dogs—'a cat' and 'a dog'—than it is like an all-purpose universal quantifier. But the step to the single all-purpose quantifier—the single all-purpose existential quantifier as well as the single all-purpose universal quantifier—is not a difficult one.

Let us take this step.[36] We begin by modifying and supplementing the pronominal apparatus of English. We first agree to treat 'it' as a true all-purpose third-person-singular pronoun. (We suppose, that is, that 'it' can have antecedents like 'a philosopher of mind', 'a woman', 'an Albanian', and so on: it can have as an antecedent *any* phrase suitable for being the antecedent of a third-person-singular pronoun.) We next introduce an indefinitely large stock of subscripts that can be attached to 'it' as labels or tags or markers: let three of them be 'x', 'y', and 'z'; fill out the stock of subscripts as you will.[37]

Now let us call the following phrases *universal quantifier phrases*[38]:

Everything$_x$ is such that
Everything$_y$ is such that
Everything$_z$ is such that
.
.
.

---

[35] 'He', 'she', 'him', and 'her' are special-purpose third-person-singular pronouns. And I suppose I'll have to concede, if you press me, that even 'it' falls short of being an all-purpose third-person-singular pronoun: one cannot say, "If we hire a philosopher of mind, it will have to be able to teach epistemology." (But this matter is complicated. Consider, for example, the sentence, 'If she praised a novelist or a poet, it was always a Russian'.)

[36] The following account of quantification is modeled on, but does not reproduce, the account presented in W. V. O. Quine's *Mathematical Logic*, pp. 65–71. The subscript device is really the same device as the device illustrated above in the text and in the two diagrams on p. 70 of *Mathematical Logic*: the leftmost occurrence of a given subscript and any other occurrence of that subscript represent the endpoints of one of Quine's "bonds."

[37] In "Meta-Ontology" in which some of this material appeared in a slightly different form, I treated 'it$_x$', 'it$_y$', and 'it$_z$' as three different third-person-singular pronouns. I now believe this to have been a mistake. If, for example, 'it$_x$' and 'it$_z$' both occur in a sentence, they are to be read as two occurrences of the one pronoun 'it' differently indexed.

[38] I assume in the following formulation of universal and existential quantifier phrases that 'everything' and 'something' are syntactically suitable antecedents of occurrences the third-person-singular pronoun. We of course stipulate that if an occurrence of 'it' is "tagged" with an 'x', then an occurrence of 'everything' or 'something' can be its antecedent only if that occurrence also bears that tag—and so for 'y' and 'z'. . . .

And call the following phrases *existential quantifier phrases*:

Something$_x$ is such that
Something$_y$ is such that
Something$_z$ is such that
.
.
.

Readers of this book are likely to have a certain skill that will enable them to turn complex general sentences of English into sentences whose generality is carried by these quantifier phrases and subscripted pronouns. For example:

Everybody loves somebody;

Everything$_x$ is such that if it$_x$ is a person, then something$_y$ is such that it$_y$ is a person and it$_x$ loves it$_y$.

Such sentences, complex general sentences whose generality is carried by quantifier phrases and subscripted pronouns, may be hard to read or even ambiguous because of uncertainty about which subordinate sentences these quantifier phrases apply to. This difficulty can be resolved by using brackets to mark the sentence each occurrence of a quantifier phrase applies to (or, as we may say, by using brackets to display the "scope" of each quantifier phrase):

Everything$_x$ is such that (if it$_x$ is a person, then something$_y$ is such that (it$_y$ is a person and it$_x$ loves it$_y$)).

An ancient legal proverb provides a more complex example:

Anyone who acts as his own attorney has a fool for a client;

Everything$_x$ is such that (if it$_x$ is a person, then if it$_x$ acts as the attorney of it$_x$, then something$_y$ is such that (it$_y$ is a client of it$_x$ and it$_y$ is a fool)).

(Brackets may be omitted in practice if there is no ambiguity for them to resolve. Thus, we may write 'Something$_y$ is such that it$_y$ is a dog' for 'Something$_y$ is such that (it$_y$ is a dog)'.)

What we have now is a supplemented and regimented version of English. (The only features of the sentences of this new "version" of English that keep them from being sentences of ordinary English are the subscripts and the brackets. If we were to delete the subscripts and the brackets from these sentences, the sentences so obtained would be perfectly good sentences of ordinary English—perfectly good from the grammarian's point of view, anyway; no doubt most of them would be stilted, confusing, ambiguous, unusable, and downright silly sentences.) But this supplemented and regimented English is a bit cumbersome, in large part because of the unwieldiness of our "quantifier phrases" and the difficulty of writing or pronouncing all those annoying subscripts. We can to some degree remedy this defect by introducing a few systematic abbreviations:

1. At each place a subscripted 'it' occurs, delete the word 'it', italicize its subscript, and raise it to the line. (Call the resulting symbols 'variables'.)
2. Abbreviate 'everything$_x$ is such that ( . . . )' as '$\forall x$ ( . . . )'—and similarly for the other variables.
3. Abbreviate 'something$_x$ is such that ( . . . )' as '$\exists x$ ( . . . )'—and similarly for the other variables.

Our second example, so abbreviated, is:

> $\forall x$ (if $x$ is a person, then, if $x$ acts as the attorney of $x$, $\exists y$ (y is a client of $x$ and $y$ is a fool)).

What we have now, of course, are quantifiers and variables. We have, or so I claim, introduced quantifiers and variables using only the resources of ordinary English. And to do this, I would suggest is to *explain* quantifiers and variables.

Some further terminology:

'$\forall$' and '$\exists$' are, respectively, the *universal* and the *existential quantifier*. An occurrence of a quantifier followed by an occurrence of a variable is an occurrence of a *quantifier phrase*. (Some logicians use 'quantifier' as I use 'quantifier phrase'. If we adopted that usage, we should need something to call the symbols '$\forall$' and '$\exists$'. ('Quantifier radicals', perhaps.) In any case, that usage is infelicitous, since everyone speaks of *the* existential quantifier and *the* universal quantifier. And—surely?—if '$\exists z$' and '$\exists y$' are existential quantifiers, they are *two* existential quantifiers.)

The pair of brackets following an occurrence of a quantifier phrase indicates the *scope* of the occurrence of the quantifier phrase.

If an occurrence of a variable is a part of a quantifier phrase, or if it occurs within the scope of a quantifier phrase containing an occurrence of that variable, it will be said to be *bound in* the formula consisting of that quantifier phrase and its scope; it will also be said to be bound in any formula of which that formula is a part. If an occurrence of a variable does not satisfy these conditions with respect to a formula, it will be said to be *free in* that formula. Consider, for example, the sentence '$x$ is a dog and $\exists x$ ($x$ is a cat),' which contains three occurrences of the variable '$x$'. The second of these occurrences is bound in '$\exists x$ ($x$ is a cat)' because it is a part of a quantifier phrase. The third is bound in '$\exists x$ ($x$ is a cat)' because it occurs within the scope of a quantifier phrase containing '$x$'. Both are bound in the whole sentence ('$x$ is a dog and $\exists x$ ($x$ is a cat)') because they are bound in '$\exists x$ ($x$ is a cat)' which is a part of that sentence. The first occurrence of '$x$' in '$x$ is a dog and $\exists x$ ($x$ is a cat)' is free in that sentence. The third occurrence of '$x$' in '$x$ is a dog and $\exists x$ ($x$ is a cat)' is free in '$x$ is a cat'—despite its being bound in '$x$ is a dog and $\exists x$ ($x$ is a cat)' and in '$\exists x$ ($x$ is a cat)'.

A variable will be said to *occur free in* a sentence if some of its occurrences are free in that sentence, and to *occur bound in* that sentence if some of its occurrences are bound in that sentence. Thus, the variable '$x$' occurs both free and bound in '$x$ is a dog and $\exists x$ ($x$ is a cat)'. If some variable occurs free in a sentence, that sentence is an *open* sentence; if a sentence contains no free occurrences of variables, it will be called a *closed* sentence. (Sentences containing no variables—like 'Moriarty is a cat'—are thus closed sentences.)

We may attribute to Frege the discovery that if the pronominal apparatus of English (or German or any reasonably similar natural language) is supplemented in the way I have outlined, it is possible to set out a few simple rules of syntactical manipulation—rules that can today be found in any good logic textbook—such that a truly astounding range of valid inference is captured in the sequences of sentences that can be generated by repeated applications of these rules.[39] It is these rules that give quantifiers and variables their point. The odd-looking, stilted, angular rewriting of our lovely, fluid English tongue that is the quantifier-variable idiom has only one purpose: to force all that lovely fluidity—at least insofar as it is a vehicle of the expression of theses involving universality and existence—into a form on which a manageably small set of rules of syntactical manipulation (rules constituting the whole of valid reasoning concerning matters of universality and existence) can get a purchase.[40] But while it is these rules that provide the motivation for our having at our disposal such a thing as the quantifier-variable idiom, they are not the source of the meaning of that idiom, the meaning, that is, of sentences containing quantifiers and variables. The meaning of the quantifiers is given by the phrases of English—or of some other natural language—that they abbreviate. If this is right, if the quantifiers are abbreviations of phrases of natural language, we can give them the very best definition possible: we can show how to eliminate them in favor of phrases we already understand.[41]

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[39] For an eloquent appreciation of the sheer *magnitude* of Frege's "discovery," see Michael Dummett, *Frege: Philosophy of Language*, chapter 2. It should be noted, however, that Dummett's description of Frege's discovery makes sense only in the light of developments in logic subsequent to Frege's death.

[40] In the quotation discussed in the Introduction, Ernest Gellner ("The Last Pragmatist, or the Behaviourist Platonist") spoke of an "invented canonical notation." We now see *what* was invented (a way of regimenting the quantificational idioms of ordinary language) and *why* (to capture a vast range of valid inferences in a few simple rules).

Let us now return to Thesis 4: The single sense of being or existence is adequately captured by the existential quantifier of formal logic. It should be evident that this thesis must be true if our explanation of the meaning of the quantifiers—and of the existential quantifier in particular—is correct. If our explanation is correct, the sentence

$\exists x$ $x$ is a dog

is an abbreviation of

Something$_x$ is such that it$_x$ is a dog.

That is,

Something is such that it is a dog.

That is,

Something is a dog.

---

[41] "That is *not* how to explain the meaning of sentences containing 'the canonical notation of quantification'. One should rather do what Tarski did: provide an algorithm that assigns to each such sentence a truth-value, given an assignment of semantic values to its syntactic constituents that are not logical constants (truth-values to atomic sentences, extensions to predicates). 'Logic chases truth up the tree of grammar.' Your explanation of the meaning of quantifier-sentences does not do this. One should therefore say of it what David Lewis said of the 'semantic marker' method of doing semantics for natural language: it doesn't tell us 'the first thing about the meaning of [a] sentence: namely, the conditions under which it would be true.' ("General Semantics," *p*. 169). I dissent from the words I have put into the Interlocutors mouth. The first thing about the meaning of a sentence, *pace Ludovici*, is what it means. And this I claim to have provided for each sentence containing quantifiers (that is, I claim to have told you what, e.g., '$\exists x$ $x$ is a dog' means, given the meaning of 'is a dog'). A formal semantics for quantificational sentences *à la* Tarski is a truth-theory for those sentences (and Tarski's was, in my view, a *correct* truth-theory for those sentences). A truth-theory for a certain class of sentences does *not* tell you what those sentences mean—or so I contend, though all the research programs of the 1980s should testify otherwise. And, more to the present point, an explanation of the meaning of a class of sentences does not, in any non-trivial sense, provide truth-conditions for them—a thesis that can be established by reflection on any philosophical analysis. Suppose, for example, that it is 1956 and you hear A. J. Ayer say, "I'll tell you what 'Priscila knows that snow is white' means. It means that it's true that snow is white, that Priscila is sure that snow is white, and that she has the right to be sure that snow is white." Would you have made a good point if you had replied, "But, Ayer—that doesn't tell us the first thing about the meaning of the sentence 'Priscila knows that snow is white'—namely, the conditions under which it would be true"? No, you would not have. (One might of course say that Ayer in fact *has* provided truth conditions for his target sentence: it is true if and only if it's true that snow is white and....' But any understanding of "providing truth-conditions" that implies that that statement is correct also implies that *I* have provided truth-conditions for sentences containing quantifiers.)

And 'Something is a dog' means the same as 'There is at least one dog' and 'There are dogs'. (Or at any rate, any differences in meaning among these three sentences are of no philosophical significance.) The existential quantifier therefore expresses the sense of 'there is' in ordinary English. And, if Thesis 2 is correct, 'There is at least one dog' is equivalent to 'At least one dog exists', and the existential quantifier expresses the sense of the ordinary 'exists' as well. (The name 'the existential quantifier' is therefore no misnomer. There is no need to search out some alternative name like 'the particular quantifier'.) Or this much is true if we have indeed given a correct account of the quantifiers. Many philosophers would dispute the account of the quantifiers given in the previous section. Our purpose in the present chapter is to explain the Quinean meta-ontology, and not to defend it. We shall examine alternative ways of looking at quantification in Chapter V.

Before leaving the "Quinean" account of quantifiers and variables, I will note two of its consequences that seem to me to be of special philosophical importance. (1) The notion of a "domain of quantification" is not an essential part of an understanding of quantification. Quantification, unless it is explicitly restricted to suit the purposes of some particular enquiry, is quantification over everything. I touch on this matter again in note 7 to Chapter V. (2) There is *au fond* only one "style" or "sort" of variable. Different styles or sorts of variables are a mere notational convenience. (Here I touch only on variables occupying nominal positions. Expressions like '$\exists F\ \forall x\ Fx$' and '$\forall p\ (p \vee {\sim}p)$' will be discussed in Chapter V.) If we like, we can use, say, bold-face variables for, say, sets, and ordinary italic variables without restriction (for "objects in general" or "just any objects"), but this is only a labor-saving device. It allows us to replace the somewhat unwieldy formula

$$\exists \boldsymbol{x}\ \exists \boldsymbol{y}\ \exists z\ (\boldsymbol{x} \text{ is a set } \&\ \boldsymbol{y} \text{ is a set } \&\ {\sim}\ \boldsymbol{z} \text{ is a set. } \&\ \boldsymbol{x} \in \boldsymbol{y}\ \&\ \boldsymbol{z} \in \boldsymbol{y})$$

with the more compact formula

$$\exists \boldsymbol{x}\ \exists \boldsymbol{y}\ \exists z\ ({\sim}\ z \text{ is a set. } \&\ \boldsymbol{x} \in \boldsymbol{y}\ \&\ z \in \boldsymbol{y}).$$

And "unsorted" variables are what we must start with, for a variable is in essence a third-person-singular pronoun, and there is only one third-person-singular pronoun, and it has only one meaning. We do not have one third-person-singular pronoun for talk about objects in one logical category and another for talk about objects in another.[42] We do not use 'it' with one sense when we are talking about artifacts and living things and asteroids and with another when we are talking about topological spaces and amounts of money and trade routes. If these things were not so, the following sentences would be nonsense:

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[42] Of course, 'he' and 'she' are (leaving aside a few special cases like ships and the Church) restricted to, respectively, males and females, and both have at least a "preference" for the category "person." Even 'it'—see note 35—has a "preference" for the categories "sexless thing" and "non-person." But, whatever logical categories may be, these are certainly not logical categories.

> Everything has this property: if it's not a proper class, it's a member of some set
>
> No matter what "logical category" a thing belongs to, it can't have contradictory properties
>
> If something belongs to the extension of a predicate, it can do so only as the result of a linguistic convention.

And these sentences are quite plainly *not* nonsense.

4. Let us now consider the last of the five theses that constitute the Quinean meta-ontology. Unlike the first four theses, the fifth cannot be stated in any useful way in a single sentence. It is a thesis about the best way—the only reasonable way—to attempt to answer (and to conduct disputes about alternative answers to) the "ontological question": What is there? Being a thesis about strategy, it involves a large number of pragmatic considerations, and it therefore requires a somewhat lengthy statement.

The fifth thesis pertains to the part of Quine's meta-ontology that is marked out by the words 'the criterion of ontological commitment'.[43] These words are not always perfectly understood. Many philosophers, it would appear, think that the words 'Quine's Criterion of Ontological Commitment' are a name for a thesis about what the 'ontological commitments' of a theory—any theory—are.[44] Many philosophers seem to think that Quine believes that there exists a well-defined class of objects called "theories," and that he believes he has devised a technique that can be applied to "theories" to reveal an objectively present (but often hidden) feature or aspect of their content called their "ontological commitments."[45] This technique could be described as follows: recast the theory in the quantifier-variable idiom, or in "the canonical notation of quantification";[46] consider the set of all sentences that are formal consequences of the recast theory; consider the members of this set that are closed sentences beginning with an existential quantifier phrase whose scope is the remainder of the sentence; it is these sentences that reveal the ontological commitments of the theory. Each of them will consist of an existential quantifier followed by a variable followed by a sentence in which that variable alone is free. (Or it may be that no variables are free in that sentence. We ignore this special case.) Suppose, for example, that the variable following the quantifier is '*x*', and that it has three free occurrences in the open sentence following the quantifier phrase. The sentence of our theory that is supposedly partly revelatory of the theory's ontological commitments may therefore be schematically represented like this:

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[43] Quine himself very early came to prefer 'ontic commitment' to 'ontological commitment'. See Quine, *Word and Object*, p. 120 *n*. I have kept his original coinage because it seems to be the usage of most philosophers.

[44] Alonzo Church, however, saw clearly that Quine had not provided a criterion of ontological commitment and undertook to provide one. See his "Ontological Commitment".

[45] For a very clear example of this, see John Searle, *Speech Acts: An Essay in the Philosophy of Language* pp. 103–113. See also my essay, "Searle on Ontological Commitment," in *John Searle and His Critics* (Searle's reply follows.)

[46] Or, rather than 'canonical notation', we might say 'canonical grammar'. See Quine, *Word and Object*, p. 231. Note that our account of quantifiers and variables in the text was largely a matter of reducing the great variety of English syntactical devices used to express existence and universality to a few standard (that is, canonical) syntactical devices.

$\exists x\ (\ldots\ldots x \ldots\ldots x \ldots\ldots x \ldots\ldots).$

An open sentence expresses a condition on objects. The "ontological commitment" of our theory that this exercise has revealed to us is this: our theory commits us to the existence of at least one object satisfying the condition we have expressed schematically as

$\ldots\ldots x \ldots\ldots x \ldots\ldots x \ldots\ldots\ .$

Here ends the description of what many philosophers believe (mistakenly in my view) is "Quine's criterion of ontological commitment." The trouble with this representation of "Quine's criterion of ontological commitment" is that it presupposes that there are well-defined objects called theories, and that each of them has a unique translation into the quantifier-variable idiom, or into "the canonical notation of quantification." If we were to suppose there to be a class of well-defined objects called sentences, we could secure the first of these presuppositions by defining a theory as any set of sentences. This would be a highly artificial account of "theories," since it would normally be supposed that the general theory of relativity, say, or the Darwinian theory of evolution, was not tied down to any particular class of sentences. But let us simply ignore this problem, and concentrate on the "unique translation" problem. There are two reasons why there is no such thing as the unique translation of a theory (or of a set of sentences) into the quantifier-variable idiom. First, the quantifier-variable idiom is not something a given sentence is "in" or "not in," as a given sentence is in, or not in, Hebrew characters or French. The quantifier-variable idiom is, rather, something present in varying degrees in various sentences. Secondly, there will generally be alternative ways of translating a sentence or set of sentences into the quantifier-variable idiom. An example may make these points clear.

Let us consider the following sequence of sentences, a sequence of a type familiar to everyone who has taught logic:

Every planet is at any time at some distance from every star

$\forall x$ (if $x$ is a planet, $x$ is at any time at some distance from every star)

$\forall x$ ($x$ is a planet $\rightarrow$ $\forall y$ (if $y$ is a star, $x$ is at any time at some distance from $y$))

$\forall x$ ($x$ is a planet $\rightarrow$ $\forall y$ ($y$ is a star $\rightarrow$ ($\forall t$ if $t$ is a time, then $x$ is at $t$ at some distance from $y$)))

$\forall x$ ($x$ is a planet $\rightarrow$ $\forall y$ ($y$ is a star $\rightarrow$ $\forall t$ ($t$ is a time $\rightarrow$ $\exists z$ ($z$ is a distance & $x$ is at $t$ separated from $y$ by $z$)))).[47]

One should not think of the quantifier-variable idiom (or the canonical notation of quantification) as something a sentence is "in" or "not in." Rather, this idiom (or this notation) is something there is *more and more of* in each of the successive sentences in this sequence. In ordinary English, there are various devices and constructions that do the work the quantifiers and variables do in the sentences of the above sequence. We can transform a sentence of English into a sentence that is not, strictly speaking, English by eliminating some of these devices and constructions in favor of quantifiers and variables. And if the English sentence is of any very great degree of complexity, there may be several "sites" within the sentence that afford opportunities to do this. In a given case, one or some or all of the opportunities may be taken; how *much* of the original sentence is transformed—how many of the opportunities for the introduction of the canonical notation of quantification are taken—will depend on the purposes of the person who is introducing the notation.

But this description of the opportunities afforded by English sentences for the introduction of quantifiers and variables suggests that within each English sentence there is a fully determinate and objectively present array of "sites" at which quantifiers and variables could be introduced, and that each of these "sites" has features dictating the precise way in which these devices are to be introduced. If this were so, introducing quantifiers and variables into English discourse would always be a mechanical procedure. It may be that the introduction of quantifiers and variables is sometimes very close to being a mechanical procedure, but this is certainly not always the case. For one thing, a choice will sometimes have to be made between alternative ways of introducing these unambiguous devices into a sentence that is ambiguous as to quantificational import. But there is a more interesting way in which the task of introducing canonical notation can be more than mechanical. Sometimes the task requires a certain amount of creativity. For a minor instance of this, consider the four-place open sentence that occurs as a part of the final sentence in the above sequence of sentences—'*x* is at *t* separated from *y* by *z*'. Where did the word 'separated' come from? A computer program—any program a human being could actually write, anyway—would probably have produced a sentence containing, instead of '*x* is at *t* separated from *y* by *z*', the sentence '*x* is at *t* at *z* from *y*'. Why didn't I? Well, just because that sounds funny. For one reason or another, while one can say that A is at some distance from B, one can't say of some distance that A is at it from B. Or one can hardly say it. (For example, one can't say, or can hardly say, "Here is a fact about the distance of Denver from San Diego: Janice is now at it from Atlanta.") Recognizing that a slavish adherence to the "at" idiom of the original was going to bring me up against this fact of English usage, I cast about for an idiomatic alternative, and came up with the "separated from . . . by . . ." locution. This is creativity if you like; not a very impressive example of creativity if it is measured against many of the daily achievements of human beings, but (I think) greatly in excess of anything a computer program could be expected to achieve. It would, of course, be absurd to suppose that the eventual introduction of the "separated from . . . by . . ." locution was in any way dictated by the content of the original English sentence. No doubt there are many other forms of words that would have served as well.

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[47] In this book, I will make only minimal use of the symbolic sentential connectives—the arrow, the ampersand, the vel, and the tilde. I will not give an account of these, but I will mention that the account I should give if I did give one would be parallel to my account of the quantifiers (a fact that should not be surprising, given the close connection between the ampersand and the universal quantifier and between the vel and the existential quantifier). That is, I would explain the ampersand as a regimented version of the English 'and' and the arrow as a regimented version of the English 'if … then …'. I would not give an extensional "definition" of these connectives. (For example, I would not say that the meaning of '&' was given by a generalization of the following device: for any class of sentences in which the same variables are free, this connective takes any two sentences in this class and makes a single sentence whose extension is the intersection of the extensions of the two sentences.) In Section 2 of Chapter V, I will present an argument for the conclusion that extensional definitions are not definitions at all. (See *n.* 41 to the present chapter for a closely related point.)

The introduction of quantifiers and variables can, moreover, be accomplished in ways that involve greater creativity than this. Consider again the final sentence in the above sequence. In my opinion, the open sentence '*z* is a distance' does not make much sense, owing to the fact that I cannot give a coherent account of the properties an object that satisfied it would have.[48] And since I think that the obvious intelligibility of the first sentence in the sequence, the sentence of ordinary English, does not presuppose that a phrase like 'four miles' (or even a phrase like 'the distance from Nauplion to Tolon', which, unlike 'four miles', is not what Quine calls a "defective noun") denotes a particular "distance," I am inclined to think that the final sentence in the sequence is not a correct paraphrase of the first—although the second, third, and fourth sentences are correct paraphrases of it.

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[48] This statement requires qualification. Suppose we give a "functional" account of what a "distance" is; suppose, that is, that we define distances in terms of what they are supposed to do for us. What distances are supposed to do is (roughly) this: they are supposed to serve as abstract "counters" that measure the spatial separation of spatial objects. It is easy enough to construct (as philosophers say; but either the objects have been there all along or they're "still" not going to be there after we've done what is called "constructing" them) objects that can be used for this purpose. For example, if we know what it is for the pair of objects {*x*, *y*}, on the one hand, and the pair of objects {*w*, *v*}, on the other, to be "equally separated"—an equivalence relation—, we can say that a "distance" is any maximal equivalence class of pairs defined by that relation (that is, any equivalence class of pairs defined by that relation that is not a proper subset of an equivalence class of pairs defined by that relation). And we can say that *x* is "at" the distance *z* from *y* just in the case that {*x*, *y*} is a member of *z*. But, of course, 'the set of distances' is a merely conventional designation of the set of all such equivalence classes. A vast number of other sets have as good a claim to be called 'the set of distances', for a vast number of other sets comprise objects that could be used as counters that uniquely measured spatial separation—given an appropriate specification of the "at" relation. When I say I cannot give a coherent account of the properties an object that satisfied '*z* is a distance' would have, I mean I cannot give a coherent account of the properties that an object that was intrinsically or non-conventionally a "distance" (as the spatial objects that are separated by "distances" are intrinsically or non-conventionally spatial objects) would have.

One could say that the fourth sentence is "as far as one can go" as regards the introduction of quantifiers and variables to do the work done by 'every', 'any', and 'some' in the sentence 'Every planet is at any time at some distance from every star'. One could say that the open sentence '$x$ is at $t$ at some distance from $y$' simply affords no opportunity for the introduction of a quantifier. But if that is so, what about a sentence like 'If, at $t$, $x$ is at some distance from $y$, and $y$ is at some distance from $z$, then the distance from $x$ to $y$ at $t$ is greater than the distance from $y$ to $z$ at $t$, or the distance from $x$ to $y$ at $t$ is equal to the distance from $y$ to $z$ at $t$, or the distance from $x$ to $y$ is less than the distance from $y$ to $z$ at $t$'? This sentence obviously expresses a truth, or its universal closure does. Are we to say that this sentence is formed from *four unrelated* predicates ('at **1**, **2** is at some distance from **3**', 'at **1** the distance from **2** to **3** is greater than the distance from **4** to **5**', etc.)?[49] No, we are not. The logical structures of the antecedent and consequent of this sentence are more closely related than *that*. We could exhibit an intimate logical relation between the antecedent and the consequent if we were willing to assume that there were things called "distances" that "separated" spatial objects from one another, and that one and the same "distance" might simultaneously "separate" A and B (on the one hand) and B and a third object C (on the other). But we need not be willing to make such an assumption—which, as I have said, I do not find coherent—to exhibit such a relation. There are a lot of alternatives. One of them would be to introduce the predicate 'at **1**, **2** is **3** times farther from **4** than **5** is from **6**'. We need no other predicate involving spatial separation at a time to express what is expressed by the sentence 'If, at $t$, $x$ is at some distance from $y$, and $y$ is at some distance from $z$, then the distance from $x$ to $y$ at $t$ is greater than the distance from $y$ to $z$ at $t$, or the distance from $x$ to $y$ at $t$ is equal to the distance from $y$ to $z$ at $t$, or the distance from $x$ to $y$ is less than the distance from $y$ to $z$ at $t$':

> If, at $t$, $x$ is 1 times farther from $y$ than $x$ is from $y$, and, at $t$, $y$ is 1 times farther from $z$ than $y$ is from $z$, then $\exists n$ $x$ is, at $t$, $n$ times farther from $y$ than $y$ is from $z$, and $n > 1$ or $n = 1$ or $n < 1$.

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[49] For an account of 'predicates', see W. V. Quine, *Elementary Logic*, §§40–42.

(Or one might choose to omit the words ‘and $n > 1$ or $n = 1$ or $n < 1$’, regarding them as an “understood” consequence of the properties of the real numbers.) If we have this six-place predicate at our disposal, we may replace the last clause—the existential quantification—in the final sentence in our sequence of sentences with ‘at *t*, *x* is 1 times farther from *y* than *x* is from *y*’, thus enabling us to avoid the awkward problem of describing the nature of the objects that satisfy the open sentence ‘*z* is a distance’.

To sum up: the transition between “not being in” and “being in” the quantifier-variable idiom is not sharp but gradual—or, better, one’s introduction of quantifiers and variables into a piece of English discourse consists in one’s seizing some or all of the opportunities afforded by the sentences that discourse comprises for replacing certain constructions within those sentences by constructions involving quantifiers and variables. And this is a procedure that may require a certain amount of creativity. A “mechanical” attempt to introduce the canonical notation of quantification may produce a grammatically dubious result. More importantly, certain ways of introducing quantifiers and variables that initially suggest themselves may seem to one on reflection to be philosophically objectionable: a way of introducing quantifiers and variables may produce a set of sentences having as a formal consequence the existential generalization on an open sentence F such that, on reflection, one is unwilling to concede that there is anything that satisfies F. (For ‘F’ read ‘*z* is a distance’, ‘*x* is a number’, ‘*y* is a hole’[50] . . . .) And one may be convinced that the “initial” piece of English discourse carried no implication that there were F’s, and that, nevertheless, the discourse contained logical structure that was somehow representable by constructions involving quantifiers and variables. It is at this point—to implement this conviction—that creativity is called for. And there is no unique, preexistent “hidden logical form” for this creativity to uncover. It is certainly not true that any translation of a piece of English discourse into the quantifier-variable idiom is as good as any other, but there will be many interesting cases in which the question whether one proposed translation is as good as another is a philosophical question, with all that *that* implies. (The question may be an aesthetic or a scientific question. Some “proposed objects” offend the aesthetic sense of certain people, even if these people have no “hard” objections to them. Others may be beautiful and philosophically unobjectionable, but hard to fit in with currently accepted scientific theories.)

It is therefore not true that a theory, or a given piece of English discourse, has certain more-or-less hidden but objectively present “ontological commitments.” Quine, moreover, was well aware of this fact, and he did not propose any mechanical technique for uncovering them. (The thesis that a philosopher who described himself as a pragmatist had made such a proposal is, surely, little short of incredible.) I would guess that readers of Quine who suppose that he had endorsed some formal technique for extracting objectively present ontological commitments from "theories" suppose this on the basis of statements like these:

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[50] See “Holes” by David Lewis and Stephanie Lewis.

> . . . we are convicted of a particular ontological presupposition if, and only if, the alleged presuppositum has to be reckoned among the entities over which our variables range in order to render one of our affirmations true
>
> . . . entities of a given sort are assumed by a theory if and only if some of them must be counted among the values of the variables in order that the statements affirmed in the theory be true
>
> Classical mathematics . . . is up to its neck in commitments to an ontology of abstract entities.[51]

It is my hope that the temptation to draw that conclusion from passages like these will be removed by the remainder of this chapter.

What, then, *is* "Quine's criterion of ontological commitment"? What is it if it is not what I have said it is not? I have said that these words are a name for a certain thesis about strategy. More exactly, they are a name for the most profitable strategy to follow in order to get people to make their ontological commitments—or the ontological commitments of their discourse—clear. To see an example of this strategy at work (rather a schematic example, I concede), suppose that I am engaged in a philosophical exchange with a colleague who is defending an ontological thesis that I think is mistaken—Phyllis, to give her a name. Phyllis, let us say, denies the existence of Xs (temporal parts, it may be, or mereological fusions of widely separated material objects, or mathematical objects, or attributes . . . .[52]) and I affirm the existence of Xs. Phyllis, I suspect, holds certain views—perhaps they are peculiar to her ontology, perhaps she shares them with all sane adults—that are (unbeknown to her) either logically inconsistent with her denial that there are Xs or are at any rate in some sort of very serious tension with that denial. Taught by Quine, I proceed as follows: I take sentences Phyllis accepts, and, by whatever dialectical devices I can muster, I get her to introduce more and more quantifiers and variables into those sentences. (Or, if you will, I persuade her to accept new sentences, sentences that come from the sentences she initially endorsed by the progressive replacement of devices and constructions belonging to ordinary English by devices and constructions belonging to the canonical language of quantification. The above sequence of sentences about stars and planets and distances may serve as an example of what is meant by "progressive replacement.") If, at a certain point in this procedure, it transpires that the existential generalization on a certain open sentence F can be formally deduced from the sentences Phyllis accepts, and if F could be satisfied only by Xs, I have shown her that the sentences she accepts, and the ways of introducing quantifiers and variables into those sentences that she has endorsed, formally commit her to the existence of Xs.

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[51] The first and the third quotation are from Quine, "On What There Is"; both occur on p. 13 of *From a Logical Point of View.* The second is from "Logic and the Reification of Universals" (*From a Logical Point of View*, p. 103).

[52] Why not stable transuranic elements or huge caches of biological weapons in Iraq? For an inquiry into the question, "Which existence questions properly belong to ontology?," see my essay, "What is an Ontological Category?"

"But wait. Let's suppose—simply to have an actual example to think about—that those 'Xs' Phyllis denies the existence of are numbers. When she sees that a certain introduction of quantifiers and variables into her sentences would have the consequence that '$\exists x$ $x$ is a number' could be formally deduced from the resulting sentences, why shouldn't she simply refuse to introduce canonical notation in that way and say, 'Thus far and no farther.' Why can't she stop playing Quine's game at will? In fact, why should she play in the first place?"

Well, any philosopher is perfectly free to resist the application of any dialectical ploy. But the following three points are in order.

—Sometimes, in simple cases involving little or no creativity, a refusal to accept the obvious proposal for the introduction of quantifiers and variables can border on the unintelligible. The symbol '$\exists$' is, after all, essentially an abbreviation 'there are' (or of '*il y a*' or of '*es gibt*' or . . . ), just as '+' is essentially an abbreviation of 'plus'. Suppose, for example, that another of my colleagues, Phillip, maintains that some metaphysical sentences are meaningful—suppose, in fact, that he has actually spoken or written the sentence 'Some metaphysical sentences are meaningful'. And suppose that he is also a hard-headed nominalist who has been known to say that (strictly speaking) there are no sentences. There is a perfectly obvious proposal for the introduction of the canonical notation of quantification into the English sentence 'Some metaphysical sentences are meaningful':

$\exists x$ ($x$ is a sentence and $x$ is metaphysical and $x$ is meaningful).

Suppose I point this out to Philip. Can he respond by saying, "I reject your contention that 'Some metaphysical sentences are meaningful' and '$\exists x$ ($x$ is a sentence and $x$ is metaphysical and $x$ is meaningful)' are two ways of saying the same thing. I accept the former sentence and deny the latter."? It is very hard to justify such intransigence, for '$\exists$' just *means* 'there are' (as '+' just means 'plus'). (How should we understand someone who was willing to write or speak the sentence 'Two plus two equals four' and yet refused—and not because he was unfamiliar with the canonical notation of arithmetic—to write or speak the sentence '$2 + 2 = 4$'?) One of Quine's many reasons for insisting on employing the canonical grammar of quantification in discussions of ontological questions was, I think, that he had encountered philosophers who accepted English sentences whose obvious “symbolization” was of the form ‘$\exists x\,(Gx \text{ and } Hx)$’, and who, nevertheless, rejected the corresponding sentences of the form ‘$\exists x\, Gx$’.[53]

—In more complicated cases, a refusal to go beyond a certain point in replacing the idioms of ordinary English with quantifiers and variables could leave English predicates that seem intuitively to be intimately logically related without any apparent logical relation. We have seen an example of this above (in our examination of the suggestion that ‘$x$ is at $t$ at some distance from $y$’ affords no opportunity for the introduction of a quantifier).

—A refusal to go beyond a certain point in introducing quantifiers and variables could leave one without any way to account for the validity of inferences that seem intuitively to be valid. (This is really a consequence of the previous point, the point about leaving intuitively logically related English predicates apparently unrelated.) We shall see a detailed application of this point in Chapters II and III, where we shall examine sentences about, or apparently about, fictional characters and sentences apparently about properties. (And I, who deny the existence of events, must meet the charge that this denial leaves me unable to account for the validity of the inference, ‘Sebastian strolled through the streets of Bologna at 2 a.m.; *hence*, Sebastian strolled through the streets of Bologna’.)

These three points enter into Quine’s strategy of ontological clarification in the following obvious way. One may always raise just these points in an ontological discussion, perhaps in a form tailored to the particular features of the discussion. Suppose, for example, that a materialist refuses to admit that the sentence ‘There are exactly two holes in this piece of cheese’ can be translated into the quantifier-variable idiom in this way:

$$\exists x\,\exists y\,(x \text{ is a hole} \,\&\, y \text{ is a hole} \,\&\, x \text{ is in this piece of cheese} \,\&\, y \text{ is in this piece of cheese} \,\&\, {\sim}x = y \,\&\, \forall z\,(z \text{ is a hole} \,\&\, z \text{ is in this piece of cheese.} \rightarrow . z = x \vee z = y)).$$

(One can well see why materialists would not want to accept this translation: there would no doubt be occasions on which they accepted what was expressed on that occasion by the sentence of ordinary English; the proposed translation expresses a truth only in the case that there are objects satisfying the open sentence ‘$x$ is a hole’; if materialism is true, there are only material objects; no material object satisfies '*x* is a hole'.) Suppose that one was carrying on an ontological discussion with such a materialist. The exact point of the discussion is not of much importance for present purposes. (One might be an opponent of materialism, or one might simply be trying better to understand what the materialist's position implies.) The third point of strategy could be applied as follows. One might ask the materialist to consider the ordinary English sentence 'If there are three caraway seeds in this piece of cheese, there are more seeds in this piece of cheese than there are holes in this piece of cheese'. This sentence is obviously a logical consequence of 'There are exactly two holes in this piece of cheese'. Anyone who accepts the above "symbolization" of the latter sentence, and who accepts any symbolization of the second sentence that is constructed along similar lines, can easily account for the fact that the second sentence is a logical consequence of the first: the symbolization of the second is a formal consequence of the symbolization of the first. But our materialist cannot accept this account of that fact, and must either be content to have no account of it or must find some other account of it. The only way that suggests itself to find an alternative account of this fact is this: find alternative symbolizations[54] of the two sentences such that (i) the "new" symbolization of the latter is a formal consequence of the "new" symbolization of the former, and (ii) neither of the new symbolizations is such that its truth requires the existence of objects satisfying some open sentence that—like '*x* is a hole'—cannot be satisfied by objects acceptable to the materialist.

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[53] See, for example, Quine’s discussion of Carnap’s distinction between “internal” and “external” questions, a distinction that allowed Carnap to dismiss as either illegitimate or trivial the question, ‘Are there numbers?’, but to regard the question ‘Is there a greatest pair of twin primes?’ as legitimate and non-trivial. The discussion occurs in W. V. Quine, “On Carnap’s Views on Ontology”. For a discussion of Quine on Carnap on internal and external questions, see Marc Alspector-Kelly, “On Quine on Carnap on Ontology”. For some actual examples of philosophers who apparently accept sentences whose obvious “symbolization” is of the form ‘$\exists x\,(Gx \text{ and } Hx)$’, and who apparently reject the corresponding sentences of the form ‘$\exists x\, Gx$’, see Church, “Ontological Commitment”.

In the present case, it is easy enough to find such alternative symbolizations—if the materialist is willing to accept the existence of numbers or some other abstract objects. (A materialist need not be a nominalist.) With some difficulty, as the Lewises have shown (see the essay "Holes") alternative symbolizations can be found that do not presuppose the existence of abstract objects. But these "nominalistic" symbolizations are, not to put too fine a point upon it, bizarre—*and* they presuppose two substantive and highly controversial metaphysical theses: mereological universalism and the Doctrine of Arbitrary Undetached Parts.[55]

Certain untoward consequences of a strict nominalistic materialism thus become evident only when one adopts Quine's strategy for clarifying ontological disputes—and it is unlikely that they would otherwise have been noticed. In my view, a general lesson can be drawn from this: All ontological disputes in which the disputants do not accept Quine’s strategy of ontological clarification are suspect. If Quine’s “rules” for conducting an ontological dispute are not followed, then—so say those of us who are adherents of Quine’s meta-ontology—it is almost certain that many untoward consequences of the disputed positions will be obscured by imprecision and wishful thinking.

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[54] That is, paraphrases. In a classic paper ("Ontological Commitments," W. P. Alston presented an argument for the astonishing conclusion that one could not avoid ontological commitment to entities of a given sort by paraphrase of sentences that appear to refer to or assert the existence of those entities. I have replied to his arguments in the essay "Alston on Ontological Commitment".

[55] Actually, it is not possible to formulate either of these principles in nominalistically acceptable terms without introducing further logical "ideology" (in Quine's sense), namely plural quantifiers and variables. The version of the "calculus of individuals" (CI) that Nelson Goodman presented in *The Structure of Appearance* might be thought to be an exception, but it is not. As developed by Rolf Eberle (*Nominalistic Systems* pp. 44–66), CI is stated in terms of axiom schemata, one of which has instances along these lines: 'If anything is red, there exists a fusion of all red things'; 'If anything is a piece of cheese, there exists a fusion of all pieces of cheese'; 'If anything is either the Nelson Column or the Arc

Now holes are perhaps not a philosophically very edifying category of object, and the constraints on a solution to the unedifying problem they pose for the materialist have been only very abstractly described in the above paragraphs. As to the former point, we should remember what Parmenides told the young Socrates: what the philosopher says must apply to mud and hair as well as to philosophically edifying things like the Good and the True. As to the second point, it is very well taken. The reader is once more referred to the discussion of fictional existence in Chapter II, where an analogue of the materialist’s problem is posed for the philosopher who denies that fictional characters exist. (It is there argued that those philosophers who deny the existence of fictional characters must confess themselves unable to account for the validity of certain obviously valid inferences.) The reader is also referred to the discussion of the existence of abstract objects in Chapter III, where an analogue of the materialist’s problem is posed for the nominalist. (It is there argued that the analogous problem is at least very hard to solve, and that anyone who denies the existence of properties and relations and other abstract objects will find it at least very difficult to account for the validity of certain obviously valid inferences.)

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de Triomphe, there exists a fusion of all things that are either the Nelson Column or and the Arc de Triomphe’. (It follows from this last instance and ‘Something is the Nelson Column’ and ‘Something is the Arc de Triomphe’ that something is a fusion of the two monuments.) While every instance of the axiom schema in question is indeed nominalistically acceptable, anyone who employs CI and who regards that axiom schema as endorsing the sentence ‘If anything is red, there exists a unique fusion of all red things’ is, at least tacitly, committed to the statement ‘The sentence “If anything is red, there exists a unique fusion of all red things” is the result of replacing the predicate-letter “F” in the axiom schema with the predicate “is red”’; and the sentence ‘Something is a predicate’—which is not nominalistically acceptable—follows from that statement by existential generalization.

# II

# Being and Non-Being

**1.** This chapter expands on one of the "Theses" of Chapter I: Thesis 2, 'Being is the same as existence'. In this chapter, I will take up in detail a challenge I addressed to believers in non-existent objects in Chapter I:

> If you think that there are things that do not exist, give me an example of one.

The right response to your example will be either, "That does too exist," or "There is no such thing as that." (p. 10)

Let us examine some possible responses to this challenge.

(1) Someone might say, "The Roman Empire does not exist." But Thesis 2 is not inconsistent with (at least I did not mean it to be inconsistent with) the proposition that there *have been* things that *no longer* exist. To meet my challenge, the friends of non-existence must produce an example of something that never has existed and never will exist—a dragon, not a dinosaur.

(2) Someone might say, "The number seventeen does not exist, because it is not in space and time." But, as I said in Chapter I, I deny that there is any conceptual connection between being in space and time and existence. Quine has made this point with characteristic brevity and elegance:

> If Pegasus existed, he would indeed be in space and time, but only because the word 'Pegasus' has spatio-temporal connotations, and not because 'exists' has spatio-temporal connotations. If spatio-temporal reference is lacking when we affirm the existence of the cube root of 27, that is simply because a cube root is not a spatio-temporal kind of thing.[1]

It may indeed be that everything that exists is spatio-temporal, but if this is so, it would have to be established by some means other than an analysis of the concept of existence. Numbers, I suppose, are not in space and time—if there are such things as numbers. But either there are numbers or there are not. If there are, they exist, and the statement, "The number seventeen does not exist" is not a successful response to my challenge. If there are not, the philosopher who says, "The number seventeen does not exist" has not put forward anything as an example of anything, and has thus not responded successfully to my challenge.

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[1] *From a Logical Point of View* p. 3.

*Being: A Study in Ontology*. Peter van Inwagen, Oxford University Press. © Peter van Inwagen 2023.
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(3) Someone might say, "The golden mountain does not exist . . . and don't tell me that in saying this I have not given an example of anything because there is no such thing as the golden mountain. In saying 'The golden mountain does not exist', I *have* called a certain object to your attention. I maintain that it's an example of a non-existent object, but, leaving the matter of its existence or non-existence aside for the moment, I have directed your attention at an object that, like any object, can be used as an example of something. The object I have called to your attention, of course, is the referent of 'the golden mountain'. And you must admit this phrase has a referent. If it does not, then if you say, 'There is no such thing as the golden mountain', you will not succeed in saying of something that there is no such thing as it. And if you can't say that, your argument for the conclusion that I haven't given an example of anything when I say 'The golden mountain does not exist' cannot succeed. In other words, when you say, 'There is no such thing as the golden mountain', you are referring to a certain object and saying of it that there is no such thing as it. But if you can refer to it so can I; and I can therefore put it forward as an example of something; I hereby put it forward as an example of something that does not exist."

I take it that this argument has been definitively refuted by Russell. We have learned from Russell (this is one way to put what we have learned from Russell) that to say that there is no such thing as the golden mountain, we do *not* have to refer to a certain object and say of it that there is no such thing as it. It suffices to say that everything is either not golden or (inclusive) not a mountain.

And, in any case, even if there were things that did not exist, wouldn't it be implausible to suppose that some one of them was *the* golden mountain? In the second of the *Dialogues between Hylas and Philonous*, the latter says, "But granting Matter to be possible, yet, upon that account merely, it can have not more claim to existence than a golden mountain, or a centaur." Hume says (*Treatise* II, ii), "We can form the idea of a golden mountain, and from thence conclude that such a mountain may actually exist." One of the fairy tales of the Brothers Grimm is entitled "Der König vom goldenen Berg." If each of these authors was referring to a golden mountain, why should anyone suppose that they were all referring to the same golden mountain? If there are any non-existent golden mountains at all, there must—surely?—be vastly, perhaps infinitely, many of them.[2]

(4) Someone might say, "Remember the funny story (funny according to *you*) you told in chapter 1: Your friend Wyman told you that there was a passage in

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[2] Of course, for Meinong, the referent of 'der goldene Berg' was unique, since it was an incomplete object, the one object whose *Sosein* comprised only two properties: being made entirely of gold and being a mountain. But if the title of the Grimm *Märchen* mentioned in the text (say) referred to some Meinongian *nicht existierende Gegenstand*, why should it refer to *that* one—and not, say, to the one having the three properties being made entirely of gold, being a mountain, and being larger than a horse? According to Meinong's *Gegenständetheoirie*, after all, that *Gegenstand is* both golden and a mountain.

Meinong's *Collected Works* in which Meinong admitted that his theory of objects was inconsistent; you spend several hours fruitlessly searching for it; your search (Wyman told you) was fruitless because the passage did not exist; but (Wyman pointed out) you were searching for *something*—and what you were searching for didn't exist. In my opinion, the joke's on you. Wyman had a very real point. It is this: Every intentional act or state has an object (as Meinong realized), and in many cases the objects of intentional states are things that—as a matter of empirical fact[3]—do not exist. (Meinong, as you have said, maintained that the objects of intentional states sometimes have 'no sort of being whatever'. We needn't accept this extreme position, which is perhaps unintelligible. It suffices to say that examination of certain cases involving intentional states shows that intentional states sometimes have objects that have being—that *are*—but which do not exist.)"

I deny that every intentional state is such that there is something that is its object. The root metaphor of the concept of intention is the aiming of an arrow (the archer who is about to loose an arrow has put *tension in*to the bowstring). But there can be aiming even when there is nothing that is aimed at. Suppose Robin Hood is on the hunt for deer and a certain pattern of light and shadow among the trees causes photons to fall on his retinae just as they would have if there were a deer before him. "Ah," he thinks, "a deer!" He nocks an arrow and aims.... but aims at what? I don't know about *you*, but it seems to *me* to be entirely evident that, in the case as described, nothing is such that he aims at *it*. One might say to him—afterwards, when the facts had come to light—, "It seems you were aiming at a pattern of light and shadow." Or one might say, "It seems you were aiming at a deer that wasn't there." One might say a lot of things about "what he was aiming at," but how seriously should we take these things one might say?

Consider first the pattern of light and shadow. I very much doubt whether there are any such things as patterns of light and shadow, but we needn't enter into that question—for if I'm mistaken and there are patterns of light and shadow, and if Robin was aiming at one of them, he was aiming at an *existent* pattern of light and shadow. Might he then have been aiming at a deer that wasn't there? Well, he certainly wasn't aiming at a deer that was *elsewhere* (i.e., nowhere near the path his arrow would take if he loosed it), so if he was aiming at a deer that wasn't there, he was aiming at a deer that wasn't anywhere. And just as "the word 'Pegasus' has spatio-temporal connotations," the phrase 'a deer' has spatio-temporal connotations: a deer that isn't anywhere is a contradiction in terms. Robin can no more be aiming at a deer that isn't anywhere than he can be aiming at a deer that has no size or shape.[4] I'm not denying that sentences like 'Robin was aiming at deer that wasn't there' have uses. (I suppose the sentence means something like, 'Robin believed he was aiming at a deer, but there was no deer where he was aiming'.) I'm not denying even that utterances of such sentences can express truths. I'm maintaining only that if someone says 'Robin was aiming at a deer that wasn't there' in appropriate circumstances, then, even if that person manages thereby to say something true, we can't infer from its truth that something is such that Robin was aiming at *it*.

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[3] Or even of *a priori* argument, since someone may search for something whose existence is demonstrably impossible—such as a lost manuscript of Ptolemy that contains a (correct) derivation of Euclid's Fifth Postulate from Postulates 1–4.

Robin, I contend, can engage in the familiar human activity called 'aiming' even if nothing is such that he is aiming at it. And the same goes for intentional states generally: I can be searching even if nothing is such that I am searching for it. (Think of Ponce de Léon—it is no doubt true that he was once searching for the Fountain of Youth, but it doesn't follow from this truth that something was such that he was searching for it.) I can be engaged in the activity that is reported by sentences that start 'Van Inwagen is thinking about...' even if nothing is such that I am thinking about it. Such cases are, no doubt, *failures* of intentionality. An intentional act or state is "supposed" to have an object, and, in many cases in which an intentional state has no object, it, that very state, *would* have an object if the world external to the person in that state were arranged differently. (Not in all cases, for an intentional state may be such that nothing *could* be its object: a proof of the parallel postulate from the other postulates of Euclidean geometry for example, or a unicorn if Kripke is right about unicorns.) But with intentionality as with so many other things, failure is possible. I have no theory of intentionality that will explain how an intentional state can have no object. I have no theory of intentionality at all. Construction of theories of intentionality is the business of philosophers of mind, and I am a metaphysician. But since there are obviously intentional states that have no object—*I* say—, the right theory of intentionality (whatever it may be) will not have the consequence that every intentional state has an object.

I conclude that phrases like 'what you were aiming at' and 'what you were looking for' cannot be used to give examples of things that do not exist.

(5) Someone might say, "Three pieces of the picture puzzle you have been trying to put together do not exist." Suppose I am working on a picture puzzle, and three pieces are missing: I see three puzzle-piece-shaped holes in the almost-complete puzzle, and I have used all the pieces that were in the box. Suppose it turns out that, owing to a mistake at the puzzle factory, the pieces in the box, the pieces I have already used, were the only pieces that were manufactured—for the puzzle comes from a new, high-tech puzzle factory in which each piece is made "separately" by computer-directed machinery.

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[4] And, whatever anyone may tell you, if a deer has the property "being in Frances's garden," Frances's garden has the property, "having a deer in it."

Does the interlocutor manage to give an example of three non-existent things? No. For suppose I complain to the manufacturer about the missing pieces and the computer that runs the factory's machinery is instructed to make good the deficiency. Suppose that troublesome device unexpectedly causes the machinery to produce *six* pieces, A, B, C, D, E, and F—where A and B are duplicates, C and D are duplicates, and E and F are duplicates, any of which would "do" as one of the missing pieces. Have the three non-existent pieces now become existent? (We certainly no longer have the reason we had for saying that three pieces of the puzzle are non-existent.) But which three of the six new pieces are the ones that the interlocutor put forward as examples of non-existent objects? A, C, and E? B, D, and F? B, C, and E? There is, of course, no answer to this question, and there would have to be one if the imaginary author of the "puzzle" example had referred to three non-existent objects. (Someone might say that only two, or only one, or none, of the new pieces were among the ones that the interlocutor referred to as non-existent. But on what ground?) What the puzzle with the three missing pieces provides an example of is not three non-existent objects but three *unfilled roles*. Someone who says, "The piece that is supposed to fit into this place in the puzzle does not exist," may be making a true assertion; but to concede this is not to concede that 'the piece that is supposed to fit into this place in the puzzle' denotes an object and that that object is non-existent. It is rather to affirm that everything fails to be a piece that is supposed to fit into this place. (Thus, our solution to the puzzle puzzle is, like our solution to the golden-mountain puzzle, essentially Russellian.) Because 'the piece that is supposed to fit into this place in the puzzle' has no referent, one cannot use this phrase to put forward an example of *anything*.

The following phrases present the friends of Thesis 2 with problems whose solution is essentially the same: 'the table that would exist if these table-parts were ever put together'; 'the statue of Goliath that would exist if this lump of gold were ever melted down and poured into that mold'; 'the person who would exist if this sperm and this egg ever united and the resulting zygote developed into a human being'. If the parts are never put together, if the lump is never melted and cast, if the sperm and egg never unite, then these phrases do not denote non-existent things; they simply do not denote anything. And, therefore, one cannot use any of them to put forward an example of anything.

(6) Someone might say, "Consider those possible worlds that have the same inhabitants as the actual world except that Elizabeth I (who had no offspring) does not exist in them. In those worlds, Elizabeth is non-existent, even if in those worlds no one would have been able to refer to her. It is obvious that there could have been more people than there are. It is obvious, in fact, that there could have been *one* more person than there is—it is obvious that there are worlds that stand to the actual world as the actual world stands to the worlds from which Elizabeth alone of the people who actually exist is 'missing'. (For example, the worlds most similar to actuality in which Elizabeth I gave birth to one child, which died in infancy.) Call these worlds 'plus-one' worlds. No doubt we are unable to refer to

any plus-one world. (No doubt we are unable to refer to *any* non-actual world.[5]) Nevertheless, plus-one worlds exist. (They can be compared to well-ordering relations on the real numbers: they exist. but it is impossible—impossible for a human being; maybe God could do it—to refer to any of them individually.) If we could refer to a particular plus-one world, we could give an example of a non-existent person. If, for example, we could (*per impossibile*) refer to a particular plus-one world as 'β', we could use the following words to give an example of a non-existent person: 'that person who does not exist in α ['α' being a proper name of the world that is in fact actual] but does exist in β'. Therefore, although I have not met the strict terms of your challenge—I have not singled out any one non-existent thing—I have shown that there *are* non-existent things. I have been unable to meet the strict terms of your challenge only because it is impossible to single out any particular non-existent thing, and not because there are no such things. If you want me to specify a non-empty *class* of non-existent things, I can do *that*: those persons who exist in plus-one worlds but do not exist in α. Or, for that matter, those persons who do not exist in α—that is, those persons who do not exist but might have existed."

This argument is fallacious. Let us suppose that we have—*per impossibile*—singled out a plus-one world and have named it 'β'. Nevertheless, 'the person who does not exist in α but does exist in β' does not refer to a non-existent person—or, as people sometimes say in discussions like this one, a "non-actual" person.[6] The extension of '$x$ is a person who does not exist in α but does exist in β' is empty in α, although it has an extension comprising exactly one person—always the same person—in many other worlds, including, of course, β. (If there are haecceities or individual essences, it expresses one of them.) The same point can be made, in reverse as it were, about "minus one" worlds. Suppose—*per impossibile*—that we can refer to a particular world that lacks Elizabeth (and lacks no one else who exists in α). Suppose we decide to call this world 'γ'. Suppose we grant (never mind that what we're granting is impossible) that in γ it is possible for people to refer to α. One cannot, in γ, refer to Elizabeth as 'the person who does not exist in γ but does exist in α' because that phrase (which in actuality denotes Elizabeth) in γ denotes nothing. One could not, therefore, in γ, offer Elizabeth as an example of a non-existent object, because, in γ, there is no such person (being, thing, object, entity, item . . . ) as Elizabeth. When all is said and done, all the present suggestion by the friends of non-existent objects comes to is the presentation of a special kind of "unfilled role" case—with the added difficulty that, although we have irenically agreed to pretend otherwise, it is not really possible to refer even to the unfilled roles. (Like well-ordering relations on the real numbers, the unfilled roles exist but are "referentially inaccessible.")

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[5] With the possible exception of the "empty world," the unique world in which nothing concrete exists—if there is a world that satisfies this description.

[6] (In this note, I anticipate matters that will receive a fuller discussion in Section 9 of Chapter IV.) The adjective 'actual' has enormous power to confuse people in discussions of modal ontology. This adjective should always be understood as short for some phrase in which the adverb 'actually' modifies some other adjective or some verb. And the adjective or verb the adverb modifies will vary according to the ontological category of the object to which the phrase containing 'actually' is applied. An actual state of affairs, for example, is a state of affairs that actually *obtains*. ('Obtains' stands to 'state of affairs' as 'is true' stands to 'proposition'.) But an actual human being is a human being that is actually—what? Human beings are not proposition-like objects like states of affairs that can "come off" or "fail to come off," and "be there" even when they fail to come off. An actual human being can be nothing other than a human being who actually *exists*. And, since 'actually exists' means no more than 'exists' (just as 'actually red' and 'actually obtains' mean no more than 'red' and 'obtains'), 'actual' when applied to human beings and other concrete objects is essentially a synonym for 'existent'. A parallel argument shows that 'actual' when applied to states of affairs is essentially a synonym for 'obtains'. Similarly, 'non-actual human being' means essentially 'non-existent human being' and 'non-actual state of affairs' means essentially 'non-obtaining state of affairs'. 'Non-actual human being', therefore, is a contradiction in terms if I am right about the relation between existence and being—but 'non-actual state of affairs' is no more a contradiction in terms than is 'false proposition'. (These remarks about 'actual' apply only to the use of this term in "abstractionist" modal ontologies like the one that will be presented in Chapter IV. The term has an entirely different sense in David Lewis's "concretist" modal ontology, and the points made in this note are irrelevant to Lewis's use of 'actual'.)

(7) Someone might say, "Mr Pickwick does not exist—and, of course, the same holds for a vast number of other fictional characters." Here at last we have a suggestion that demands a really extended discussion. I cannot deal with this proposal simply by pointing out a fallacy. I shall have to present a theory of fictional objects. Proposals (1) and (2) were based on misapprehensions. Proposals (3) through (6) were met, and properly met, with the response, "There is no such thing as that." The response to the present proposal, however, will be, "That does too exist."

**2.** An examination of Meinong's philosophy of being and non-being will be a useful first step in our discussion of fictional objects. We have several times noted that Meinong's position was not simply that there were things that did not exist. His position was much more radical. He has, in fact, made the following famous (or notorious) statement: "There are objects of which it is true that there are no such objects."[7] What could have led him to make such an extraordinary statement? He was, or so he saw matters, driven to say that there were objects of which it was true that there were no such objects by data for which only the truth of this extraordinary statement could account. These data were of two sorts: linguistic and psychological. The psychological data were those considered in our discussion of the objects of intentional states in Proposal (4) above. Let us consider the linguistic data. These data consisted of sentences like the following and what seemed to be obvious facts about them:

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[7] "*. . . es gibt Gegenstände, von denen gilt, daß es dergleichen Gegenstände nicht gibt . . .*," R. Haller, R. Kindinger, and R.M. Chisholm (eds.) *Alexius Meinong Gesamtausgabe* Vols. I–VII (Graz: Akademische Druck- und Verlagsanstalt, 1968–1978), Vol. II, p. 490. I will take it to be uncontroversial that for Meinong everything, without exception, is an "object" (*Gegenstand*). I am aware that Meinong distinguished objects from "objectives" (*Objective*). If, for example, the thought crosses my mind that golf is a popular sport, golf is the *Gegenstand* of my thought, and the popularity of golf is its *Objectiv*. But objectives are objects: if I believe that the popularity of golf is regrettable, the object of my belief is the popularity of golf. Since, at least in Meinong's sense of the word, everything is an object—'object', in Meinong's usage, is the most general count-noun—I will take it to be uncontroversial that 'Every object is F' is equivalent to 'Everything is F' and that 'Some object is F' is equivalent to 'Something is F'.

> The Cheshire Cat spoke to Alice
> The round square is an impossible object
> Pegasus was the winged horse captured by Bellerophon.

The obvious facts were these: first, each of these sentences is or expresses a truth; secondly, the result of writing 'There is no such thing as' and then the subject of any of these sentences is, or expresses, a truth. (I so use 'subject' that the subject of 'The Taj Mahal is white' is 'the Taj Mahal' and not the Taj Mahal. I use 'there is no such thing as' to mean 'there is no such thing as, and there never will be or ever was any such thing as'.) Thus, for example, it is true that the Cheshire Cat spoke to Alice, and it is also true that there is no such thing as the Cheshire Cat. We have, therefore, the following general truth:

> There are subject-predicate sentences such that the sentences formed by writing one of them and then writing 'and there is no such thing as' and then writing its subject-term is a truth.

Or, in Quine's compact and useful notation:

> $\exists x \exists y$ ($x$ is a subject-predicate sentence & $y$ is the subject-term of $x$ & $\ulcorner x$ and there is no such thing as $y\urcorner$ is true).

These are the linguistic data. Reflection on these data suggests the following question. The proposition expressed by the offset sentences, the proposition that summarizes the linguistic data, is a *semantical* generalization, a proposition that asserts that there are linguistic items of a certain description ("sentence") that possess a certain semantical property (truth). What is the material-mode counterpart of this semantical generalization—what generalization stands to it as 'Everything is identical with itself' stands to 'If a term has a referent, every sentence that is formed by flanking the phrase "is identical with" with two occurrences of that term is true'? How can we express in a single (finite) sentence the general fact that is expressed collectively by the members of the infinite class of sentences of which the sentences

> The Cheshire Cat spoke to Alice and there is no such thing as the Cheshire Cat
>
> The round square is an impossible object and there is no such thing as the round square
>
> Pegasus is the winged horse captured by Bellerophon and there is no such thing as Pegasus

are three representatives? (This "single sentence" would not be a semantical sentence, for sentences of the type illustrated by our three examples are not semantical sentences; they do not ascribe semantical properties like truth or reference to linguistic items.) The sentence, 'There are objects of which it is true that there are no such objects' represents an attempt at an answer to this question, but Meinong obviously recognizes that there is something unsatisfactory about this attempt, since he does not baldly say that there are objects of which it is true that there are no such objects; rather, he says, "Those who were fond of a paradoxical mode of expression could very well say, 'There are objects of which it is true that there are no such objects'." Um, . . . yes—but suppose one was *not* one of those who were fond of a paradoxical mode of expression; what non-paradoxical mode of expression would one use in its place?

One obvious suggestion is: 'There are objects that do not exist'. But Meinong would object to this suggestion on grounds that are related to a peculiarity of his metaphysical terminology,[8] for he holds that things that are not in space and time—the ideal figures the geometer studies, for example—do not "exist" (*existieren*), but rather "subsist" (*bestehen*), another thing entirely, or almost entirely, for subsistence is, like existence, a species of being.[9] And this terminological red herring (see "response (2)" above) confuses matters. We had better leave the word 'exists' alone for the moment. But if we do not allow ourselves the use of the word 'exists', our question is unanswered: What shall we use in place of 'There are objects of which it is true that there are no such objects'?

Perhaps we should turn to the question, What, exactly, *is* wrong with this sentence? Perhaps we should ask, What grounds did I have for calling it an "extraordinary" sentence? Perhaps we should ask why even Meinong found it necessary to remark that only one who was fond of a paradoxical mode would say that there were objects of which it was true that there were such objects.

The answer to these questions (they are essentially the same question) seems to *me* to be obvious: there could not possibly be objects of which it was true that there were no such objects; if there *were* an object of which it was true that there was no such object (as it), that object would *be*—and if it *were* (if I may so phrase my point), it would not be true of it that there was no such object as it. Or consider this very straightforward formal argument:

> 'There are objects of which it is true that there are no such objects' is equivalent to '$\exists x$ there is no such object as $x$'; 'there is no such object as $x$' is equivalent to

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[8] This point was touched on in the discussions of Thesis 2 and Thesis 3 in Chapter I.

[9] Or better 'merely subsist'. The phrase 'species of existence' suggests that nothing could both exist and subsist. But Meinong in fact supposes that existence *entails* subsistence: the Hofburg *both* exists and subsists, and the cube root of 27 *merely* subsists.

> 'nothing is $x$' or '$\sim\exists y\ y = x$'; 'There are objects of which it is true that there are no such objects' is therefore equivalent to '$\exists x\sim\exists y\ y = x$'; and this formula is in its turn equivalent to '$\exists x \sim x = x$'—that is, 'Something is not identical with itself'.

That the statement 'There are objects of which it is true that there are no such objects' is incoherent is therefore undeniable—*unless*, of course, 'there are' has (and '*es gibt*' has and '*il y a*' has) more than one sense. For suppose 'there are' has two senses; let the phrase itself represent one of these two senses, and let the same phrase in bold-face represent the other: there will be no contradiction in saying that there are objects of which it is true that **there are** no such objects. Or, at any rate, no contradiction that can be displayed by the argument I have just presented. The force of this argument, of course, depends on the assumption that only one sense can be given to 'there is' or to its formal equivalent '$\exists$'. For suppose that '$\exists$' is ambiguous; suppose there are two senses it might have. If we allow the symbol itself to represent one of these two senses, and 'E' to represent the other, then we are forced to admit nothing more than that 'There are objects of which it is true that there are no such objects' is equivalent either to '$\exists x\sim \mathrm{E}y\ y = x$' or to '$\mathrm{E}x\sim\exists y\ y = x$'. And this thing we are forced to admit is not obviously self-contradictory. To deduce an absurdity like '$\exists x\ x \neq x$' or '$\mathrm{E}x\ x \neq x$' from either of these formulae, one would have to make use of some principle that governed the relations between '$\exists$' and 'E', some principle along the lines of '$\exists\alpha\Phi\alpha \vdash \mathrm{E}\alpha\Phi\alpha$' or its converse, and a Meinongian is unlikely to assent to the validity of any such principle.) But it is not evident that 'there is' can plausibly be regarded as having two senses. (That, at any rate, was the position defended in Chapter I.) For the moment, it seems safe to say that a strong *prima facie* case can be made for the logical equivalence of 'There are objects of which it is true that there are no such objects' and 'Some objects are not identical with themselves'.

Meinong, so far as I know, was not aware of the strong *prima facie* case for the equivalence of 'There are objects of which it is true that there are no such objects' and 'Some objects are not identical with themselves', but, as we have seen, he was obviously aware that there was something logically unsatisfactory about the former sentence. Meinong and I agree, therefore, that the sentence 'There are objects of which it is true that there are no such objects' must, in the last analysis, be replaced with some other sentence. But what sentence? Chisholm has made some suggestions:

> Meinong wrote 'There are objects of which it is true that there are no such objects'. But he was well aware that this statement of his doctrine of *Außersein* was needlessly paradoxical. Other statements were: "'The non-real' is not 'a mere nothing'," and "The object as such . . . stands beyond being and non-being." Perhaps the clearest statement was provided by Meinong's follower, Ernst Mally: "*Sosein* is independent of *Sein*." We could paraphrase Mally's statement

> by saying: "An object may have a set of characteristics whether or not it exists and whether or not it has any other kind of being."[10]

Let us follow Chisholm and use 'the doctrine of *Außersein*' as a name for the thesis such that the words 'There are objects of which it is true that there are no such objects' are a needlessly paradoxical formulation of that thesis. Our problem is this: How is the doctrine of *Außersein* to be formulated without paradox? This is essentially the same problem as: "How are we to express, in a single general sentence—not a semantical generalization—, the fact that is expressed collectively by the infinite class of sentences of which our three sample sentences are representatives?" It seems to me that Chisholm's suggested statements of the doctrine of *Außersein* fare no better than the original. Let us first consider Chisholm's paraphrase of Mally's suggestion: 'An object may have a set of characteristics whether or not it exists and whether or not it has any other kind of being' (which I shall abbreviate as '…whether or not it has being'. It is not entirely clear to me what the logical structure of this statement was intended to be. I hesitate between these two candidates:

$$\forall x\,(x \text{ has being} \rightarrow \exists y\,(y \text{ is a set of characteristics } \&\ x \text{ has } y).\ \&\ {\sim}\,(x \text{ has being}) \rightarrow \exists y\,(y \text{ is a set of characteristics } \&\ x \text{ has } y))$$

$$\forall y\,(y \text{ is a set of characteristics } \&\ {\sim}\,\exists x\,(x \text{ has } y\ \&\ x \text{ has being}).\ \rightarrow \exists x\,(x \text{ has } y\ \&\ {\sim}\,x \text{ has being})).$$

But I do think it evident that anyone who accepts Mally's Thesis (so to call 'An object may have a set of characteristics whether or not it has being') will—and must—affirm the thesis that

> The concept *object that has a set of characteristics and lacks being* is not a self-contradictory concept.

—and therefore must affirm the thesis that the concept *object that lacks being* is not a self-contradictory concept. Suppose then that we are considering a certain object $X$ that falls under this concept, that lacks being. Can it be that $X$ is one of the things that there are? Obviously not. But to say "It is not the case that $X$ is one of the things that there are" and to go on to say (or write), "${\sim}\,\exists y\,(y = X)$" is to say the same thing twice, albeit in different words (or different symbols). And '${\sim}\,\exists y\,(y = X)$'

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[10] "Beyond Being and Non-Being," '*Außersein*' may be translated as 'independence [*sc.* of objects] of being'. '*Sosein*' may be translated as 'being-thus' or 'predication' or 'having characteristics'. '*Sein*' means 'being' (the mass term, not the count-noun).

is equivalent to '$X \neq X$'. The paradoxical consequences of 'There are objects such that there are no such objects' are not avoided by Chisholm's proposal.

Let us turn to Mally's actual words, or to Chisholm's semi-translation of his actual words: '*Sosein* is independent of *Sein*'. Suppose one said, "Mathematical ability is independent of sex." This *could* mean that there was no "law-like" connection between mathematical ability and being male or being female, a thesis logically compatible with the proposition that every mathematically able person is a woman. But, surely, Mally does not mean the doctrine of *Außersein* to be consistent with the following statement: "Every object of predication *in fact* is (has being), but there's no nomic necessity in that; if the course of history had gone otherwise, it might well have turned out that there were objects of predication that were not (had no being)." No, Mally's words are certainly meant to be a way of saying that the class of objects of predication that have no being is *in fact* non-empty; that is to say, his words must mean or be equivalent to 'Some objects of predication are not (have no being)'. That is to say: 'There are objects [of predication] of which it is true that there are no such objects'.

The reader who agrees with what I have said about '*Sosein* is independent of *Sein*' will almost certainly agree with me when I say, as I do, that 'The non-real is not a mere nothing' and 'The object as such stands beyond being and non-being' are also essentially equivalent to 'There are objects of which it is true that there are no such objects'. The problem of finding a non-paradoxical expression of the doctrine of *Außersein* is therefore so far unsolved. The problem of expressing in full generality the (non-semantical) thesis of which

> The round square is an impossible object and there is no such thing as the round square

and

> Pegasus was the winged horse captured by Bellerophon and there is no such thing as Pegasus

are particular cases is therefore so far unsolved.

In my view, this problem is unsolved for the same reason that the problem of trisecting the angle by Euclidean means is unsolved: it has no solution. I contend that the only generalization that has these two sentences as particular cases is a semantical generalization, something like the semantical generalization set out in the first paragraph of this section as a summary of the "linguistic data."

**3.** And here, I think, the matter would stand if the linguistic data that supported the doctrine of *Außersein* consisted only of sentences of the form 'F*x* and there is no such thing as *x*'. But there are other linguistic data that support the doctrine of *Außersein*, sentences not of this form that seem to be true and whose truth seems to imply that there are objects of which it is true that there are no such objects. The most persuasive of these data, the only ones that are really hard for the anti-Meinongian to deal with, belong to what I shall call *fictional discourse*. (And now we have returned to our discussion of Proposal (7).)

By fictional discourse I mean not the sentences that are *contained* in works of fiction but rather sentences spoken or written *about* works of fiction—whether they issue from the pen of Helen Vendler or from the mouth of the fellow sitting beside you on the plane who is providing you with an interminable defense of his conviction that Stephen King is a greater novelist than Tolstoy. The sentences of fictional discourse that I mean to call attention to are those that have the following four features: (i) they are existential quantifications, or at least look as if they were; (ii) they have complex quantificational structures (e.g., ∃∀∃)—or look as if they did; (iii) the inferences from these sentences that standard quantifier logic endorses for sentences that have the quantificational structures these sentences appear to have are valid—or at least *appear* to be; (iv) they contain not only "ordinary" predicates—predicates such as you and I and our friends might satisfy (predicates like 'is fat', 'is tall', 'is bald', 'is the mother of')—but also "literary" predicates, predicates like 'is a character', 'first appears in chapter 6', 'is partly modeled on', 'is described by means of the same narrative device the author used in her earlier, more successful depiction of', and 'is the most fully developed of the masculine anti-women visible in all Dickens's novels'. Here is an example of a sentence with the four features I have listed:

> There is a fictional character who, for every novel, either appears in that novel or is a model for a character who does.

(This sentence would express a truth if, for example, Sancho Panza served as a model for at least one character in every novel but *Don Quixote* itself.) This sentence is (i) an apparent existential quantification; (ii) complex in its apparent quantificational structure; (iv) contains literary predicates: 'is a fictional character', 'appears in', and 'is a model for'. Moreover, (iii) it certainly appears that the inferences licensed by quantifier logic for sentences with the apparent quantificational structure of the above sentence are valid. It appears, for example, that we can validly deduce from the above sentence the sentence

> If no character appears in every novel, then some character is modeled on another character.

And this inference is, or appears to be, endorsed by quantifier logic, for it seems that its premise and conclusion can be correctly translated into the quantifier-variable idiom as follows:

$$\exists x\,(x \text{ is a fictional character } \&\ \forall y\,(y \text{ is a novel} \rightarrow (x \text{ appears in } y \vee \exists z\,(z \text{ is a fictional character } \&\ z \text{ appears in } y \ \&\ x \text{ is a model for } z))))$$

$$\sim\exists x\,(x \text{ is a fictional character } \&\ \forall y\,(y \text{ is a novel} \rightarrow x \text{ appears in } y)) \rightarrow \exists x \exists y\ y \text{ is a model for } x.$$

It is easy to verify that the second sentence is a formal consequence of the first. (And the thesis that these two translations are correct does not seem to be in any way implausible or far-fetched. They certainly *look* correct. And, really, what alternative is there? Surely these translations *are* correct? Surely the inference *is* valid?)

Now note a second formal consequence of the first sentence: ‘$\exists x\ x$ is a fictional character’—that is to say: ‘There are fictional characters’. It seems, therefore, that the logical relations among certain sentences of fictional discourse can be accounted for only on the assumption that there are fictional characters.[11] (It is not to the point that the first of our sentences does not express a truth. The two sentences were chosen to provide an example of a formal inference that was simple but nevertheless subtle enough that the utility of quantifier logic in demonstrating its validity was evident. But there are plenty of true sentences of fictional discourse whose obvious translations into canonical notation allow the immediate deduction of '$\exists x$ $x$ is a fictional character'. One example among thousands of possible examples would be: 'In some novels, there are important characters who are not introduced by the author till more than halfway through the work'.)

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[11] For an extremely interesting reply to this argument, see Kendal Walton, *Mimesis as Make-Believe: On the Foundations of the Representational Arts* pp. 416–419. Walton’s reply—which is in aid of his thesis that there is nothing about works of fiction that threatens to force fictional entities upon us—is very complex and resists compression. At the center of this very complex reply is the thesis that someone (myself, let us say) who utters (assertively; in a literary discussion; in ideal circumstances) the sentence ‘If no character appears in every novel, then some character is modeled on another character’ is using language in a very different way from someone who utters (assertively and so on) the sentence ‘If no one is a citizen of every country, then someone is carrying someone else’s passport’. The latter speaker is simply making an assertion about nations and their citizens and certain of the relations that hold among these things. But I am *not* making an assertion about novels and the characters that occur in them and the relations that hold among these things. I am rather engaged in a certain game of pretense. It is a part of this game of pretense that the real universe is “divided into realms corresponding to the various novels,” and that each realm and its inhabitants were literally created by the author of the novel to which it corresponds. In uttering the sentence ‘If no character appears in every novel, then some character is modeled on another character’, I am pretending to describe this universe and the actions and motives of the creators of its several realms. I am not, in fact, saying something that has the logical structure that ‘If no character appears in every novel, then some character is modeled on another character’ has; I am, rather, *pretending* to say something that has that logical structure (which is why I use that sentence). My main objection to this theory—to the theory of which I have given an incomplete and inadequate account: the reader is directed to the original—is that it simply does not seem to me to be *true* that the speaker who utters ‘If no character appears in every novel, then some character is modeled on another character’ (assertively and so on) is engaged in any sort of pretense. I would assimilate that case to the case of the speaker who says, “Some novels are longer than others”—a case of simple description of how things stand in the world if ever there was one. I would ask: is it really plausible to suppose that the speaker who says, “Some novels contain more chapters than others” and the speaker who says, “Some novels contain more characters than others” are engaged in radically different kinds of speech act? Isn’t it much more plausible to suppose that each speaker is making the same *sort* of assertion and that their assertions differ only in *content*? Isn’t it much more plausible to suppose that each speaker is simply making an assertion about the relations that hold among novels, relations that are grounded in various features of the internal structures of these novels?

Suppose, then, that there are fictional characters—objects of thought and reference like Tom Sawyer and Mr Pickwick. (I take it to be obvious that if there are such things as fictional characters, then 'Tom Sawyer' and 'Mr Pickwick' refer to two of them.[12] I shall later have something to say about how it comes to be the case that a name of this kind denotes a particular fictional character.) If this supposition is correct, how can we avoid the conclusion that there are objects of which it is true that there are no such objects? For is it not evident that Tom Sawyer and Mr Pickwick do not exist and never did exist? And if they do not exist (I will not at this point in the dialectic dispute Meinong's attempt to distinguish between two modes of being, existence and subsistence, ill-judged though I believe it to be), there are no such things as they, for, if there are such things as they, they are human beings, and human beings can participate in being only by existing.

We have reached this conclusion, that there are fictional characters, by the following route: if the obvious logical consequences of certain sentences of fictional discourse are accounted for in what seems the only possible way, there will be (true) sentences of fictional discourse from which 'There are fictional characters' can be validly deduced. But could these data perhaps be interpreted semantically (following our earlier model, following the way I proposed dealing with data like the apparent truth of 'The Cheshire Cat spoke to Alice and there is no such thing as the Cheshire Cat'), and thus rendered "harmless"? Could they not be given some semantical interpretation that would have no consequences about fictional characters "themselves," but only such semantical consequences as 'There are character *names* that occur in works of fiction that can be used in sentences of fictional discourse that express truths'? I can say only that I see no way to do this. If there is indeed no way to do this, then the data of fictional discourse I have adduced constitute stronger support for Meinongianism than the other linguistic data that Meinong and his followers appeal to.

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[12] That is, these two names refer to two fictional characters when the names occur in fictional discourse. When these occur in the pages of *The Adventures of Tom Sawyer* and *Huckleberry Finn* and *The Pickwick Papers*, I maintain, they refer to nothing. When Dickens wrote the sentence "'I am ruminating,' said Mr Pickwick, 'on the strange mutability of human affairs.'," he did not thereby make an assertion that implied that someone had said something. He did not make any assertion at all. He was rather adding a sentence to an unfinished manuscript, a physical object that he was in the process of crafting or producing. He was crafting this manuscript with the intention that, in due course, printed copies of that manuscript would available for purchase by members of the reading public. He was thus, in writing that sentence, no more making an assertion than a watchmaker, in adding a gear to an unfinished watch, is making an assertion. But time-conscious people who acquire watches do so in order to have a device that will tell them the time, and that is not why "members of the reading public" acquire novels. If telling time is what a watch is for, what is a novel for? I will address this question in Section 4.

We seem, therefore, to have a strong argument for the doctrine of *Außersein*. But, as we have seen, there is a strong argument against this doctrine, an argument that we have not seen how to deal with: The doctrine of *Außersein* entails, or seems to entail, that something is not identical with itself—a *reductio ad absurdum* if ever there was one. But if we have not seen how to deal with this argument, we have at least mentioned in passing what will seem to many to be a promising way of dealing with it: the "way of the two quantifiers."

Suppose, then, that we have two "existential" quantifiers (but we must read nothing ontological into the label 'existential quantifier'), '∃' and 'E'. Let us propose the following two readings for these quantifiers (when we earlier touched on the possibility of there being two existential quantifiers, we did not propose readings for them). Suppose we read 'E' as an existential quantifier whose range is restricted to those objects that participate in being, to the objects that are. And suppose we read '∃' as an existential quantifier whose range is absolutely unrestricted, whose range comprises *all* objects, even those that are not. It is easy enough to see that if we allow ourselves this distinction, and if we suppose that fictional characters fall within the range of the wider existential quantifier and do not fall within the range of the narrower, we may interpret our linguistic data in a way that entails no paradoxical consequence. Our data would support only this conclusion: '$\exists x$ $x$ is a fictional character'. And nothing paradoxical follows from this conclusion. We cannot deduce from it either that something that lacks any sort of being (some fictional character, say) is not identical with itself, or that something that has being is not identical with itself.

These reflections on what Meinong must do if he is to state the doctrine of *Außersein* without paradox are not very profound. I do not think it is controversial that the doctrine of *Außersein* requires a kind of quantification that "goes beyond being." The important question is this: *can* there be a kind of quantification that goes beyond being? It is my contention that there cannot be, that the idea of quantifying beyond being simply does not make sense. I can hardly hope to demonstrate this to the satisfaction of the committed Meinongian, however: any argument I can present for this position must be an argument the Meinongian has already considered—or, at best, a technical refinement of an argument the Meinongian has already considered. I will do what I can, however: I will explain why the idea of quantifying beyond being does not make sense to *me*.

I begin by examining the idea of universal quantification, an idea expressed by a large variety of words and phrases, the most important of which are 'all', 'everything', and 'there is no'.[13] More exactly, I begin by examining the idea of *unrestricted* universal quantification. (It is a commonplace of the philosophy of language that when one uses the idiom of universal quantification, one often, one perhaps usually, has some tacit restriction in mind. “We’ve sold everything,” says the sales clerk after a particularly busy day in the shop, and we who hear this assertion do not protest that the number 510, the Taj Mahal, and the counter—a concrete object that is right there in the shop and which the shopkeeper is legally entitled to sell—remain unsold.) We all, I believe, understand the idea of universal quantification, and it does not require much philosophical instruction for us pass from an understanding of this idea to an understanding of the idea of unrestricted universal quantification—*truly* universal quantification.[14] Now it seems to me that the idea of unrestricted universal quantification is a pellucid and wholly unambiguous idea. And it seems to me that the Meinongians and I and everyone else mean the same thing by the phrase ‘unrestricted universal quantification’—although the Meinongians and I will certainly disagree about which unrestricted universal quantifications are *true*. Let us use the symbol ‘$\forall$’ to express absolutely unrestricted universal quantification (in other words, let us use this symbol in its usual sense). I say this:

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[13] The argument that follows in the text is deeply influenced by David Lewis, "Noneism or Allism?," But Lewis is not to be held responsible for the way I have formulated the argument. It is adumbrated in the story of the Queen of Mars in Chapter I.

$\forall x \sim x$ is a unicorn.

Miriam the Meinongian says this:

$\sim \forall x \sim x$ is a unicorn.

(In fact, Miriam says this is a necessary truth.) I say I don’t see how Miriam’s assertion could be true. The world being as it is, Miriam’s assertion seems to be false (necessarily false, if Kripke is right about unicorns). If Miriam’s assertion were true—this is what I want to say—, and if I were made free of all space and all time, I ought to be able to find, encounter, or observe a unicorn. But this I should *not* be able to do: no magic carpet or starship or time machine or wormhole-opener could take me to a place and time where there was a unicorn. Miriam will reply that the truth of ‘$\sim\forall x \sim x$ is a unicorn’ does not entail the “findability” of unicorns. Not everything [an absolutely unrestricted ‘everything’] is a non-unicorn, she says—and yet unicorns are nowhere to be found. (More precisely: they *are* to be found in certain places, but *I* cannot visit these places because they do not exist and I, who do exist, can visit only existent places, whatever exotic mode of transport I may employ.) Unicorns are nowhere to be found because they lack *being*. But when Miriam says this, I must protest that either she contradicts herself or I do not understand her. (I recommend that she respond to this protest as Chisholm once responded to a similar protest: “I accept the disjunction.”) In my view, on my understanding of being, each statement (after the first) in the following sequence is a consequence of—and is in fact equivalent to—the preceding statement in the sequence:

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[14] Anyone who does not understand unrestricted universal quantification will be unable to understand a sentence that appeared in the last paragraph but one in the text: ‘And suppose we read “$\exists$” as an existential quantifier whose range is absolutely unrestricted, whose range comprises *all* objects, even those that are not’. And anyone who does not understand that sentence will (surely?) be unable to understand the supposed distinction between ‘$\exists$” and “E.”

All unicorns lack being

For every object that is a unicorn, it is true of it that there is no such object (as it).

Every unicorn is such that everything [an unrestricted ‘everything’] is not it.

$\forall x$ ($x$ is a unicorn $\rightarrow \forall y \sim y = x$)

$\forall x \sim x$ is a unicorn.

Miriam, then, affirms both ‘All unicorns lack being’ and ‘$\sim\forall x \sim x$ is a unicorn’. And, as *I* understand ‘lacks being’, the former sentence implies the denial of the latter.

It would therefore seem that—since Miriam and her fellow Meinongians obviously do not mean to embrace a straightforward formal contradiction—, she (and they) must mean something different by ‘has being’ and ‘lacks being’ from what I mean by these phrases. But what *does* she mean by them? I do not know. I say ‘$x$ has being’ means ‘$\sim \forall y \sim y = x$’; Miriam denies this. Apparently, she takes ‘has being’ to be a primitive, an indefinable term, whereas I think that ‘has being’ can be defined in terms of ‘all’ and ‘not’. (And I take definability in terms of ‘all’ and ‘not’ to be important, because I am sure that Miriam means exactly what I do by ‘all’ and ‘not’—and thus she understands what *I* mean by ‘has being’ and is therefore in a position to speak with authority on the question whether she and I mean the same.) And there the matter must rest. Miriam believes that ‘has being’ has a meaning that cannot be explained in terms of unrestricted universal quantification and negation. She therefore believes in two kinds of quantification where I believe in one. I have two quantifiers—‘$\forall$’ and ‘$\exists$’ (that is ‘$\sim\forall\sim$’)—and she has four: the two I have and two others; let us write them this way, ‘A’/‘E’. These two quantifiers may be defined in terms of ‘$\forall$’ and ‘$\exists$’ and ‘has being’:

$\mathrm{A}x\,\mathrm{F}x =_{df} \forall x$ ($x$ has being $\rightarrow \mathrm{F}x$)

$\mathrm{E}x\,\mathrm{F}x =_{df} \exists x$ ($x$ has being & $\mathrm{F}x$).[15]

Or so they may be defined for the benefit of someone who knows what the Meinongian means by ‘has being’. But not for *my* benefit, for, as I have said, I do not know what the Meinongian means by ‘has being’. (There are philosophers—Terence Parsons, for example—who reject Meinongs’s distinction between *Existenz* and *Bestand*, existence and subsistence, who hold that Vladimir Putin and the negative square root of 64 both exist, and go on to maintain that there are things, things both abstract and concrete, that do *not* exist: the present Tsar and Autocrat of all the Russias, for example, and the negative cube root of 64. These philosophers would say that while *there is* such a thing as Mr Pickwick, he does not *exist*—$\exists x$ ($x$ = Mr Pickwick & ~ $x$ exists). I do not know what they mean by '$x$ exists'.)

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[15] Note that “$\mathrm{E}x\mathrm{F}x$” and “$\sim\mathrm{A}x\sim\mathrm{F}x$” are logically equivalent—owing to the fact that “$\exists x$ ($x$ has being & $\mathrm{F}x$)” and “$\sim\forall x$ ($x$ has being $\rightarrow \sim\mathrm{F}x$)” are logically equivalent.

I therefore cannot accept the Meinongian doctrine of *Außersein*. But what then of our strong argument *for* the doctrine of *Außersein*?—the argument based on the data of fictional discourse? Since I do not understand the idea of objects of which it is true that there are no such objects, nothing can be (for me) an argument for the existence or reality or being (none of these is the right word, of course, but what would the right word be?) of objects of which it is true that there are no such objects. What is for the Meinongian an argument for the doctrine of *Außersein* becomes for someone like me a *problem*: What are those of us who cannot understand the idea of objects that lack being to say about fictional discourse, which appears to be a vast repository of evidence for the [insert proper verb-stem here]-ing of such objects? *We* must understand fictional discourse in a way that does not presuppose the doctrine of *Außersein*. *We* must adopt a non-Meinongian analysis of or account of or theory of fictional discourse. And what might such a theory be?[16] What are the available non-Meinongian theories of fictional discourse?[17]

**4.** I begin with an exposition of a theory I have presented in various publications.[18] When I have set out this theory, I will describe two other non-Meinongian theories of the ontology of fiction, those of Nicholas Wolterstorff and Amie Thomasson. Wolterstorff's and Thomasson's theories are, in a sense I shall try to make clear, in substantial agreement with mine; they differ from mine in being much more specific than I care to be about the metaphysical nature of fictional characters.[19]

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[16] One sort of non-Meinongian analysis of fictional discourse might make use of the idea of "substitutional quantification." (I take it that no one can properly say, "I am a Meinongian because I have two sorts of existential quantifier that bind variables in nominal positions, the objectual or the referential—that's the narrow one—and the substitutional—that's the wide one." A Meinongian, surely, is a philosopher who thinks there are two kinds of *objectual* quantifier, a wide objectual quantifier whose range comprises all objects and a narrow one whose range is restricted to the objects that are. After all, Meinongians think that Pegasus is a *Gegenstand*, an object; the German for "objectual quantification" is "*gegenständlicher Quantifizierung*." Essentially the same point can be made in terms of reference. One does not qualify as a Meinongian in virtue of saying that the sentence "Pegasus is a winged horse" is true despite the fact that "Pegasus" does not refer to anything. A Meinongian must say that "Pegasus is a winged horse" is true because "Pegasus" refers to a winged horse, and is true despite the fact that the horse "Pegasus" refers to does not exist.) Substitutional quantification will be discussed in Chapter V.

[17] For a well-worked-out Meinongian theory of fiction, see Richard Routley, *Exploring Meinong's Jungle and Beyond: An Investigation of Noneism and the Theory of Items* especially, chapter 7, "The Problems of Fiction and Fictions," pp. 537–605.

[18] "Creatures of Fiction," "Fiction and Metaphysics," "Pretense and Paraphrase," "Quantification and Fictional Discourse," "Existence, Ontological Commitment, and Fictional Entities."

A non-Meinongian theory of fiction (that is, a theory of fiction that allows only one sort of existential quantifier) must answer the following question: How are we to deal with the fact (or is it a fact?) that when fictional discourse is translated into the quantifier-variable idiom, it can be seen to imply that fictional characters like Tom Sawyer and Mr Pickwick *are* or *have being*, that they *exist*? (In the remainder of this chapter, I will use 'exist' to mean the same as 'are' and 'have being', for I need no longer attend to Meinong's spurious distinction between *Existenz* and *Bestand*.) I propose that we simply accept this implication. I propose that we adopt a theory according to which fictional characters exist. I propose, in fact, that the existence of fictional characters is just what our examination of fictional discourse has demonstrated. More exactly, I hold that our examination of fictional discourse has demonstrated that this follows from two assumptions: that what is said by those engaged in fictional discourse is (often) true, and that there is no way to rewrite or paraphrase the true sentences of fictional discourse so as not to allow the deduction of '$\exists x$ $x$ is a fictional character' from the obvious and proper translations of these sentences into the "canonical notation of quantification." The first of these assumptions seems obviously right: 'In some novels, there are important characters who are not introduced by the author till more than halfway through the work' seems to be, without qualification, *true*. As to the second, it may be possible to understand sentences like 'In some novels, there are important characters who are not introduced by the author till more than halfway through the work' in a way that allows their truth to be consistent with there being no fictional characters, but I have never been able to think of any way to do this and I have never seen any workable suggestion about how it might be done. Since, therefore, I think there are true sentences of fictional discourse (vast numbers of them, in fact) that entail 'There are fictional characters' (which I take to be equivalent to 'Fictional characters exist'), and since I think one should accept the perceived logical implications of that which one believes,[20] I conclude—tentatively, perhaps, but all philosophical conclusions should be tentative—that fictional characters exist.

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[19] Kendall Walton's theory, the theory described in note 11, is also a non-Meinongian theory of the ontology of fiction. But Walton's theory is wholly different from Wolterstorff's and Thomasson's and mine. Walton's theory denies the existence of fictional characters—and not in the subtle way (or the unintelligible way: take your pick) the Meinongian denies the existence, and even the being, of fictional characters. Walton denies the existence of fictional characters in the same straightforward sense as that in which the naturalist denies the existence of supernatural beings and the nominalist the existence of universals. The Meinongian says that "Tom Sawyer" names something that lacks being; Wolterstorff, Thomasson, and I say that "Tom Sawyer" names something that has being; Walton says that "Tom Sawyer" names nothing at all.

[20] Unless, of course, these perceived logical implications are so incredible as to lead one to withdraw one's assent from the proposition that has been seen to imply them. This reservation does not seem to

This reasoning is, of course, an application of the Quinean "strategy for making our ontological commitments clear" that I outlined in Section 4 of Chapter I. In that section, I raised the question whether one might simply "refuse to play Quine's game"—as did the late Ernest Gellner. I discussed his refusal at some length—and more in sadness than in anger, really—in the Introduction. I have nothing to say about Gellner's description of the grounds for his refusal that I did not say there. And I can think of no ground for refusing to "play the game" that differs in any important way from Gellner's. (Or no ground other than a root-and-branch rejection of Quine's philosophy of logic—no ground other than an affirmation of the possibility of, for example, quantification into non-nominal positions or advocacy of the use of substitutional quantification to avoid unwanted ontological commitments.)

Those philosophers who, like the admirable Argle and Bargle, admit the legitimacy of Quine's strategy in ontological debate will, I think, mostly be willing to accept the following thesis: The history of ontological debates in which all parties admit the legitimacy of Quine's strategy shows that it is harder to avoid tacitly asserting the existence of things like numbers, sets, properties, propositions, and unrealized possibilities than one might have thought it would be. If, for example, you think there are no numbers, you will find it difficult to recast all you want to say in the quantifier-variable idiom (and to do so in sufficient "depth" that all the inferences you regard as valid will be valid according to the rules of textbook quantifier logic) without finding that the sentence

$\exists x\ x$ is a number

is a formal consequence of "all you want to say." It may be possible in the end for you to do this—for you to "avoid ontological commitment to numbers"—but you will not find it a trivial undertaking.

What I have said about numbers, I say about fictional characters: If you think there are no fictional characters, you will find it difficult to recast all you want to say in the quantifier-variable idiom (and to do so in sufficient "depth" that all the inferences you regard as valid will be valid according to the rules of first-order logic) without finding that the sentence

$\exists x\ x$ is a fictional character

is a formal consequence of "all you want to say." It may be possible in the end for you to do this—for you to "avoid ontological commitment to fictional

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me to apply in the present case. "Fictional characters exist" does not seem to me to be so incredible that it should lead me to withdraw my assent from "In some novels, there are important characters who are not introduced by the author till more than halfway through the work."

characters"—but you will not find it a trivial undertaking. (I am inclined to think you will find it an impossible undertaking.)

It seems, therefore, that much of what we say in fictional discourse is true and that the truths of fictional discourse carry ontological commitment to fictional characters. That is to say, it seems that fictional characters exist. And, since the names that occur in works of fiction, names like 'Mr Pickwick' and 'Tom Sawyer' (when they occur not in works of fiction, but in discourse *about* works of fiction, in what I am calling fictional discourse), denote fictional characters if fictional characters are there to be denoted, Mr Pickwick and Tom Sawyer are among the things that are—an assertion that we anti-Meinongians regard as equivalent to the assertion that Mr Pickwick and Tom Sawyer are among the things that exist. (It should be noted that, at least in certain circumstances, ordinary speakers are perfectly willing to apply the word 'exist' to fictional characters. Consider: "To hear some people talk, you would think that all Dickens's working-class characters were comic grotesques; although such characters certainly exist, there are fewer of them than is commonly supposed." "Sarah simply ignores those characters that don't fit her theory of fiction. She persists in writing as if Anna Karenina, Tristram Shandy, and Mrs Dalloway simply didn't exist.")

There are two obvious (and very simple) objections to our Quinean argument for the existence of fictional characters:

> If fictional characters exist, then there exist things of kinds such that everyone knows that that there are no things of those kinds: witches and djinn and Cyclopes and Klingons and....
>
> It is absurd to suppose that fictional characters exist. If fictional characters exist then Tom Sawyer and Mr Pickwick and Sherlock Holmes exist, and Sawyer and Pickwick and Holmes are paradigm cases of things that do *not* exist.

I will consider these two objections in their turn. Let us first consider witches. (I expect that everyone will agree that a satisfactory reply to the objection, "Your theory implies the existence of witches and there are no witches" will, *mutatis mutandis*, be a satisfactory reply to the objection, "Your theory implies the existence of djinn and there are no djinn.")

There are characters in some works of fiction who are witches. For example, three of the characters in John Updike's novel *The Witches of Eastwick*—Alex Medford, Jane Spofford, and Sukie Rougemont—are witches. Can we reconcile the thesis that fictional witches (fictional characters who are witches) exist with the fact that witches do not exist? We can certainly try.

Let us begin our attempt by considering some sentences that might be spoken in a conversation about *The Witches of Eastwick*. If a party to that conversation were to say, "Alex Medford is a witch,"[21] that person would say something true. But what would the ground of the truth of that statement be? What is the appropriate semantics for sentences like 'Alex Medford is a witch'—that is, the appropriate semantics for those sentences when they occur in fictional discourse? (The qualification is important. I maintain that on many occasions on which sentences and proper names and predicates occur in discussions of works of fiction, they should be regarded as having quite different semantical properties from those they have in any other context. The linguistic items we shall examine and discuss in reply to the objection to the Quinean ontology of fiction we are now considering are to be understood as occurring in discussions of works of fiction—for the most part, discussions of *The Witches of Eastwick*.) It cannot be that the sentence 'Alex Medford is a witch' is or expresses a truth just in the case that 'Alex Medford' denotes a certain object that falls within the extension of the predicate 'is a witch'—for it *is* true, and (*pace* the adherents of Wicca) nothing falls within the extension of that predicate. We may contrast that sentence with the sentence, 'Alex Medford is one of the central characters of *The Witches of Eastwick*'. That sentence, too, is or expresses a truth. And it seems that the appropriate semantical analysis of that sentence *is* that it expresses a truth just in the case that 'Alex Medford' denotes an object that falls within the extension of the predicate 'is one of the central characters of *The Witches of Eastwick*'. (At any rate, if fictional characters do exist, then this must be the case.)

As an aid to understanding the difference between the semantical properties of these two sentences, let us consider four lists of predicates:

List A
is a witch
is a widow
is a sculptress who lives in a village or small town in Rhode Island called 'Eastwick'

List B
is an alchemist
is a divorcée
is a portrait painter who lives in a village or small town in Massachusetts called 'Southwick'.

List C
is one of the three central female characters in John Updike's novel *The Witches of Eastwick*
is introduced to the reader in Chapter I ("THE COVEN") of *The Witches of Eastwick*
is played by Cher in the movie adaptation of *The Witches of Eastwick*

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[21] A more realistic imaginary utterance would perhaps be, "Alex Medford is a witch—and I mean a real witch, not just a woman who thinks she's a witch."

List D
is one of the six central female characters in John Updike's novel *Couples*
is murdered in Chapter II ("MALEFICIA") of *The Witches of Eastwick*
is played by Susan Sarandon in the movie adaptation of *The Witches of Eastwick*.

The sentence formed by prefixing 'Alex Medford' to any of the predicates in List A expresses a truth. And yet there are no witches. And, moreover, although vastly many widows exist or have existed, none of them is the referent of 'Alex Medford'. (To a near certainty, some widows are or have been named 'Alexandra Medford', but the name 'Alex Medford' does refer to any of them when it occurs in discussions of *The Witches of Eastwick*.) And, if there were a municipality in Rhode Island called 'Eastwick' (in fact, there is not), none of its inhabitants would the referent of 'Alex Medford' (when it occurs . . . )—not even one of them who happened to be named 'Alexandra Medford'.

The sentence formed by prefixing 'Alex Medford' to any of the predicates in List B expresses a falsehood.

The sentence formed by prefixing 'Alex Medford' to any of the predicates in List C expresses a truth.

The sentence formed by prefixing 'Alex Medford' to any of the predicates in List D expresses a falsehood.

The preceding four paragraphs might suggest that in literary discourse there are two kinds of predication—one that figures in the application of "non-literary" predicates to fictional characters (predicates like the predicates in lists A and B), and another that figures in the application of "literary" predicates to fictional characters (predicates like the predicates in lists C and D). I suggest, however, that the initial 'is' of the predicates in lists C and D is simply the copula, the 'is' of predication—the same 'is' that is a constituent of the preceding clause and is a constituent of 'Vladimir Putin is the President of Russia' and 'Ammonia is a base' and 'π is an irrational number."[22] I would further suggest that the initial 'is' of the predicates in lists A and B is something quite different from the copula—although its meaning in intimately related to the meaning of the copula and is in a way "parasitic" on the meaning of the copula. (Or I might say this: from the point of view of syntax *of course* the word 'is' that is a constituent of the predicates in lists A and B is the copula; from the point of view of semantics, it is not the copula.)

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[22] The meaning of the copulative "is" is given by its function. And its function is to transform adjectives and adjectival phrases (and indefinite descriptions like "an honest man") into verbs or predicates. Thus, prefixing "is" to the adjective "green" produces the verb (or verb phrase or predicate) "is green." Note that, as Frege has pointed out, in German one may say either "*Dieses Blatt ist grün*" (This leaf is green) or "*Dieses Blatt grünt*" (This leaf "greens"). There are similar pairs of sentences in English: "I am thirsty" and "I thirst," for example.

I will call it "the copula of fiction." But to explain this phrase, I must say something about the nature of fiction.[23]

I begin with some meditations on a hobby horse. Seven-year-old Timmy is romping about the house on his hobby horse—a wooden artifact made for him by a doting aunt and named (by Timmy) Valiant. Timmy is pretending that Valiant is a horse. Timmy is pretending to be riding a horse. Timmy is pretending to be a Texas Ranger in the Old West who is pursuing outlaws. But in what sense of 'pretending' is he pretending these things? Not in the sense in which the confidence trickster who is offering to sell you the Brooklyn Bridge is pretending to be its owner. Not in the sense in which an undercover narcotics officer is pretending to be an addict who wants to buy heroin. Not in the sense in which he, Timmy, recently pretended to be ill when he wanted to stay home from school. No, Timmy is not trying to deceive anyone, and he does not expect the members of his family to *believe* that he is riding the plains of Texas in pursuit of outlaws. And yet he is pretending. He is engaged in a game of pretense. And "Valiant" is a *prop* in this game of pretense. This game has rules—tacit, of course—and among them is a rule that *authorizes* the use of an artifact (an artifact whose shape and markings represent a sort of gesture in the direction of some of the more salient visual characteristics of a horse) as a "pretend horse." Timmy, moreover, is not the only one who can participate in this game. Those who understand the game will be aware that its rules present those who witness Timmy's play with a sort of open invitation to participate in it, to *collaborate* with Timmy in his pretense. If an adult visitor to Timmy's house says, "That's a fine steed you've got there. Is it a boy horse or a girl horse? A boy? What's his name?," that person has joined the game. Although Timmy does not expect anyone to believe that the pretend horse between his legs is a real horse, he will, at least in a certain limited range of circumstances, expect people to *pretend* to believe that it's a real horse. He may in fact be indignant if his older sister says "You're just being stupid. That's not a horse. It's only a piece of wood"—for she would (literally) not be playing the game: no one would tell someone riding a horse that it was only a piece of wood.

Now consider Timmy's mother, who, while Timmy is running about with his hobby horse, is reading *The Witches of Eastwick*. What is she doing? Like her son, she is playing a game of pretense. In precisely the same sense in which Timmy is pretending to ride a real flesh-and-blood horse, she is pretending to be reading a history—a record of events that have actually occurred. The copy of *The Witches of Eastwick* that she is holding in her hands is, moreover, a prop in her game of pretense, a prop authorized for that use by the rules of her game. This game is called "reading a novel" or "reading a work of fiction"—a game much more important and much more pervasive in human life than “riding a hobby horse.” There are, of course, many significant differences between her game of pretense and Timmy’s. For one thing, reading a novel is much more like reading a history than “riding” a hobby horse is like riding a horse. A reader of *The Oxford Handbook of Witchcraft in Early Modern Europe and Colonial America* and a reader of *The Witches of Eastwick* are both, in the same sense of the words, reading something. Timmy and an officer leading a cavalry charge, are not both, in the same sense of the words, riding something. (It is possible to imagine sane—if extremely ill-informed—readers of *The Witches of Eastwick* who believe that they are reading a history of events that really happened, reading a book belonging to the same genre as Truman Capote’s *In Cold Blood*. It is not possible to imagine a sane person, even a child, who is “riding” a hobby horse and who believes that he or she is riding a horse.) There are, nevertheless, important similarities between Timmy’s game of pretense and his mother’s. Among them is that both are games that two—or more—can play. We have seen how an indulgent adult might collaborate with Timmy in his game. And the other members of his mother’s book club may collaborate with her—or all its members may collaborate with one another, for no individual need play the central role in her game that Timmy plays in his. Imagine that the two following exchanges take place at a meeting of the book club—the members which are, in our imagination, currently reading and meeting to discuss *The Witches of Eastwick*.

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[23] My sources are E. H. Gombrich, "Meditations on a Hobby Horse," and Walton's *Mimesis as Make-Believe*, cited in note 11.

> “Alex is the divorcée, right? Or is she the one whose husband deserted her?”
>
> “No, she’s a widow. Sukie is the one whose husband deserted her, and Jane is the one who’s divorced.”
>
> “Susan Sarandon played Alex in the movie, didn’t she?”
>
> “No, she played Jane. Cher was Alex. And Michelle Pfeiffer was Sukie.”

Two things are certain. The first is that all the things the respondents have said in both these exchanges are true—as true as ‘Vladimir Putin is the President of Russia’, as true as ‘Ammonia is a base’, as true as ‘π is an irrational number’. The second is that the truth of the sentences the latter of the two responses comprises presents no particular semantical difficulties: The sentence ‘She played Jane’ expresses (in that context, in response to the question addressed to the speaker) a proposition that is true just in the case that the term ‘Susan Sarandon’ denotes an object $x$ and the term ‘Jane’ denotes an object $y$ such that the ordered pair $\langle x, y\rangle$ belongs to the extension of the two-place predicate ‘**1** played **2** in the movie adaptation of *The Witches of Eastwick*’. (The extension of that predicate comprises only pairs whose first term is a human being and whose second term is a fictional character.) The respondent is making a straightforward factual statement about the novel (albeit about its relational rather than its intrinsic characteristics)—a statement as straightforwardly factual as, "*The Witches of Eastwick* was written by John Updike," or "*The Witches of Eastwick* is not a terribly long novel—about 75,000 words."

But the truth of 'She's a widow' is another matter. If you could examine every widow that was or ever had been, you would discover that none of them was Alex Medford: for Alex Medford is a fictional character and no widow, none of the great cloud of widows that God observes (as he surveys, from his well-known God's-eye point of view, all time and all space) is a fictional character. Why then does the respondent say, "She's a widow" when she knows that the antecedent of 'she' is 'Alex Medford'?

That is a very good question. Here is a tempting but, in the final analysis, unsatisfactory answer to it.

> The respondent is engaged in a game of pretense—one of the, so to speak, outlying precincts of the game Timmy's mother was playing when she was reading the novel. As Timmy's mother was pretending to read a history when she was reading the novel, the questioner and the respondent in the second exchange are pretending to be discussing a history. (Compare: "Marshall Soult commanded the VI Corps at Jena, right?" "No, that was Marshall Ney.") Within the game of pretense, the speaker is pretending to predicate 'is a widow' of a real person named 'Alex Medford'—she is speaking *as if* the conversation were about a history and therefore uses the apparatus of reference and predication, or at any rate uses language that looks and sounds like the apparatus of reference and predication.

This is, I have said, a tempting but unsatisfactory answer. It is unsatisfactory because it cannot account for sentences that involve, or appear to involve, the application of both "normal" and "literary" predicates to the same fictional character. For example: 'Alex Medford, one of the central characters of *The Witches of Eastwick*, is a widow'. Although sentences of this sort are common in discussions of works of fiction, we can imagine a world in which they do not occur in fictional discourse. We can imagine a world in which fictional discourse is so organized that ordinary and literary predicates never occur in the same sentence. We can imagine a world in which a speaker engaged in fictional discourse, instead of uttering (for example) the one sentence 'Alex Medford, one of the central characters of *The Witches of Eastwick*, is a widow' utters two successive sentences: 'Alex Medford is one of the central characters in *The Witches of Eastwick*. Alex Medford is a widow'. The semantics of this twofold utterance is easy to describe: in uttering the first sentence, the speaker made a straightforward descriptive statement about a certain fictional character; in uttering the second, the speaker was *pretending* to make a straightforward descriptive assertion about a real woman—two quite different kinds of speech act. We can, I say, imagine such a world, but it is not our world. We *do* use sentences that contain both normal and literary predicates. But if there is only one sentence, there can be only one speech act. And that one speech act can only be simple factual assertion. The speaker who says, "Alex Medford, one of the central characters of *The Witches of Eastwick*, is a widow," is not engaging in a pretense, but is rather asserting something about a fictional character. But if that is so how shall we understand the function of 'is a widow' in this assertion?—for Alex Medford is no more a widow than a hobby horse is a horse.

Let us consider the property expressed by the predicate 'is a widow'—widowhood or "being a widow." If Alex Medford does not *have* the property "being a widow," it nevertheless seems undeniable that she bears a certain important and salient relation to it, a relation she bears to many properties, properties that, like "being a widow" are "non-literary" properties (for example, those expressed by the predicates in List A above), and fails to bear to many other non-literary properties (for example, those expressed by the predicates in List B above). Various ways of defining or analyzing this relation might suggest themselves: one candidate analysis is that it is the relation expressed by such open sentences as '*x* is represented as having *y* in the fiction in which *x* is a character'; another is that it is the relation expressed by '*x* would have *y* if the fiction in which *x* is a character were not a fiction but a history'. (There are several other possibilities.) I do not regard any of the suggested analyses of this relation that I have seen (or have thought of) as workable, and I will myself offer no analysis of it. In my work on the ontology of fiction, I have been content to note that it is a relation that obviously figures in our discourse about fiction and to give it a name. I have generally called it 'holding'.[24] Thus, I say that Alex Medford *has* the property "being a fictional character" and *holds* the property "being a widow." In this usage, 'has' means what it ordinarily means in statements about objects and their properties (or their attributes or characteristics or features or qualities)—'This new material has several desirable properties'; 'Spiders and insects share some important anatomical features' .... That is, '*x* has the property *y*' means '*y* is a property of *x*'. (I chose 'holding' as a name for the relation I oppose to having for no better reason than the fact that the two words are paired in a well-known phrase in the Anglican wedding service: 'to have and to hold, from this day forward...'.) Thus, Alex

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[24] In "Creatures of Fiction" (cited in n. 18), I called it ascription. In a detailed treatment of the ontology of fiction, I would treat "holding" as a three-term relation and express it by using some such sentence as "*x* holds *y* in *z*"—for example, "Charles Lovecraft holds "being alive" in chapter I of *Who Murdered Charles Lovecraft?*." (It is certainly common enough for a character in a murder mystery to hold that property only in its first chapter.) I have called the third term of this relation a "place"—that is a "place" within a work of fiction. A place could be many things—a novel, a chapter, a paragraph, a story-within-a-story.... (Cf. the fact that "having" is really a three-place relation—for Queen Anne had the property "being alive" in 1713 but not in 1715. "Places" stand to holding roughly as times stand to having.) Holding is formally unlike having in several important respects. For example, Alex Medford holds neither the property "having once visited Glasgow" nor the property "never having visited Glasgow." And there are characters who hold contradictory properties—owing either to the inattention of their authors or to their Borgesian meta-fictional playfulness.

Medford has the properties expressed by the predicates in List C, and holds (but does not have) the properties expressed by the predicates in List A. (She does, however, have—e.g.—the property "holding the property 'being a witch'.") She neither has nor holds the properties expressed by the predicates in List D, but each of them is a property of at least one fictional character—and only a fictional character could have any of them. She neither has nor holds the properties expressed by the predicates in List B, but they are no doubt properties of various men and women (they certainly *could* be)—and only a human being (only something that *has* the property "being a human being") could have any of them. There are, moreover, fictional characters who hold each of the properties expressed by the first two predicates in List B, and there could be a fictional character who held the property expressed by the third.

The speaker who says (on the one hand), "Alex Medford appears in every chapter of *The Witches of Eastwick*" or "Alex Medford was played by Cher in the movie adaptation of the novel," and the speaker who says (on the other), "Alex Medford is a witch" or "Alex Medford is a widow," are both making assertions about a fictional character. They are both describing her[25] and neither assertion is a "move" in a game of pretense.

We may provide a straightforward semantics for the sentences of fictional discourse if we distinguish two sorts of extension a predicate may have in fictional discourse: its "real extension" (or simply its extension) and its "fictional" extension.[26] The real extension of a predicate is (as is perhaps indicated by the parenthetical qualification 'or simply its extension') is what we have always called its extension. Its fictional extension comprises those and only those objects that that hold the property it expresses. Here are the semantical analyses of a few representative "subject-predicate" sentences of fictional discourse.

Alex Medford is a fictional character

This sentence is true just in the case that 'Alex Medford' denotes an object that falls within the extension of the predicate 'is a fictional character'.

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[25] Our use of person pronouns in fictional discourse is governed by the following convention: one uses feminine pronouns to refer to characters who hold the property "being female"—and, of course, one uses masculine pronouns to refer to characters who hold the property "being male." A similar convention governs the proper names of fictional characters. Participants in a discussion of *The Witches of Eastwick* do not refer to the character Alex Medford by the name "Alex Medford" because John Updike (or anyone else), named or dubbed or baptized her "Alex Medford." They rather refer to her by that name because she holds the property "being named 'Alex Medford'." Updike, of course, "chose" that name for her—but only in the sense that he chose to write the story in such a way that one of its characters held the property "being named 'Alex Medford'."

[26] Well, that's a start. As we shall see later, a predicate may have, in addition to its extension and its fictional extension, a fictional fictional extension, a fictional fictional fictional extension—and so on (in theory) *ad infinitum*.

> Alex Medford is a witch

This sentence is true just in the case that 'Alex Medford' denotes an object that falls within the fictional extension of the predicate 'is a witch'. (The 'is' that occurs in this sentence is thus "the copula of fiction." And we may say that the sentence as a whole is an example of "fictional predication.") Note that although the predicate 'is a witch' has an empty extension, it has a non-empty fictional extension.

> Alex Medford, one of the central characters of *The Witches of Eastwick*, is a widow

This sentence is true just in the case that 'Alex Medford' denotes an object that both falls within the extension of the predicate 'is one of the central characters of *The Witches of Eastwick*' and falls within the fictional extension of 'is a widow'.

I have insisted that the normal use of the sentence 'Alex Medford is a witch' in fictional discourse is to express a factual proposition about a fictional character—an existent thing, a thing that exists in the same sense as the sense in which you and I exist, a thing that numbers among its properties the property "holding the property 'being a witch'." And I have denied that its function is to be a counter in a "move" in game of pretense: I have denied that the participant in fictional discourse who says, "Alex Medford is a witch" is *pretending* ("hobby-horse" pretending) to make an assertion about a real woman (about something that *has* the property "being a woman"). I do, however, find it useful to imagine that in the early stages of the (pre-) history of fictional discourse, something like our "tempting but unsatisfactory" account of sentences like 'Alex Medford is a witch' was right.

Imagine, for example that two Neolithic hunters are chatting while butchering an aurochs. (And I will ask you to imagine the story I am telling is not a story—not a fiction—, that the events I describe really happened. I ask this because it could be distracting to have to take into account that the discussion of fiction I shall present is itself a fiction.) They are discussing the stories of Waasnodae, their tribal storyteller, and those of his predecessor, Dakwaa. One of them says,

> In the stories of Waasnodae, warriors are given many words to speak. But Dakwaa gave his warriors few words to speak. Indeed, in the stories of Dakwaa, we heard more words from women than from warriors. And in the story of the Arrow That Would Not Fall, an elk and an otter spoke more words than any warrior.

His companion replies,

> The greatness of a warrior is not to be judged by his words. A brave and cunning warrior may speak many words or few. This Dakwaa knew when he told the story of Noodin and told us little of what he said, and this Waasnodae

> knew when he told the story of Nimkii and gave him many fine speeches. Noodin was brave and cunning, and Nimkii was no less brave and cunning.

Noodin was, as we should say today, the fictional hero of a story told by Dakwaa, and Nimkii the fictional hero of a story told by Waasnodae. I think that the *roots* of what I have called fictional predication may be something like this. The second speaker's sentence, 'Noodin was brave and cunning, and Nimkii also was brave and cunning' was not a fictional predication. Rather—to adapt some words used in our presentation of the "unsatisfactory" account of the semantics of 'Alex Medford is a widow',

> The conversation of the two speakers occurred within a game of pretense.[27] The second speaker was pretending to predicate 'was brave and cunning' of two men named 'Noodin' and 'Nimkii'—he was speaking *as if* the conversation were about two men who "had really lived" and *as if*, when he and the other members of his tribe had listened to Dakwaa and Waasnodae tell their stories they had been listening to narratives of events that "had really happened." He therefore used the apparatus of reference and predication when he was speaking of those two men, or at any rate used language that looked and sounded like the apparatus of reference and predication.

I find it attractive to suppose that such a pretense is the "ancestor" of fictional predication because it explains why sentences like 'Alex Medford is a fictional character' and 'Alex Medford is a widow' appear to differ only as 'Vladimir Putin is a head of state' and 'Vladimir Putin is a divorcé' differ—that is, it explains why the latter sentence *appears* to predicate 'is a widow' of someone. It explains, or at least goes some way toward explaining, why the "real" copula and the copula of fiction are phonetically and visually identical.

Let us now turn to the second of our two "obvious and very simple" objections to our Quinean ontology of fiction. What shall we say about our firm conviction—everyone's firm conviction—that Tom Sawyer and Mr Pickwick and Sherlock Holmes do not exist?[28] Let us consider two cases in which someone might use the sentence 'Sherlock Holmes does not exist'. Consider, first, a frustrated police detective who says in exasperation, "It would take Sherlock Holmes to solve this case, and unfortunately Sherlock Holmes doesn't exist." Consider, next, the response of an amused police officer (in our imagination a Hollywood prewar London bobby) to a flustered tourist who has requested his assistance in finding 221B Baker Street ("You know, Constable—where Sherlock Holmes lived"). "Lord bless you, sir, Sherlock Holmes doesn't exist and never did. He's just a chap in a story made up by someone called Conan Doyle." It seems to me that the detective's use of 'Sherlock Holmes doesn't exist' expresses a proposition necessarily equivalent to the proposition,

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[27] Within one of its "outlying precincts." The "core pretenses" of the game were these: When Dakwaa and Waasnodae were telling their stories they were hobby-horse pretending to be relating histories; and their audiences were hobby-horse pretending to be listening to speakers who were relating histories.

[28] The Austrian philosopher Maria Reicher, who has attended meetings of copyright lawyers, has told me that they are amused to learn that there are philosophers who think that fictional characters do not exist. Fictional characters, they maintain, not only exist, but (some of them, at least) are extremely valuable pieces of intellectual property. (That fictional characters can be pieces of intellectual property is no more a source of ontological difficulty than the corresponding thesis about plots.)

> No one has all the properties the fictional character Sherlock Holmes holds (nor has anyone very many of the most salient and striking of these properties).

And the Hollywood bobby's use of 'Sherlock Holmes does not exist' expresses—I would argue—a proposition necessarily equivalent to the proposition.

> Your use of the name 'Sherlock Holmes' rests on a mistake. If you trace back the use of this name to its origin, you'll find that it first occurs in a work of fiction, and that it was not introduced into our discourse by an "initial baptism." That is, its origin lies in the fact that Conan Doyle wrote a story in which one of the characters held the property "being named 'Sherlock Holmes'."[29]

The difference between these two examples is this: In the first example, both the speaker and the audience know that Holmes is fictional and the speaker is making a comment that presupposes this knowledge in the audience; in the second, only the speaker knows that Holmes is fictional, and is, in effect, informing his audience of this fact. The lesson I mean to convey by these examples is that the non-existence of Holmes is not an ontological datum; the ontological datum is rather that we can use the *sentence* 'Sherlock Holmes does not exist' to say something true. (Or something false. I can imagine cases in which it was used to say something false.[30]) Different theories of the ontology of fiction will account for this datum in different ways. According to one ontology of fiction, the reason we can use this sentence to say something true is that 'Sherlock Holmes' does not denote anything. According to another, the reason is that 'Sherlock Holmes' denotes something non-existent. I prefer a third account, the one I have given. These ontologies should be compared and evaluated not simply by seeing how well they explain our reactions to special and isolated sentences like 'Sherlock Holmes does not exist'; they should be compared and evaluated by seeing how well they explain our reactions to the whole range of sentences we use to talk about fiction—and our ability to integrate these explanations with an acceptable philosophy of the quantifier and an acceptable general ontology.

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[29] Propositions as closely related to them as the proposition "Something is (1) male and currently reigns over France, (2) identical with everything that is male and currently reigns over France, and (3) bald" is to the proposition "The present king of France is bald."

[30] It is late in the 22nd century, and Sally is being examined on her Ph.D. thesis, *The Consulting Detective in British Popular Fiction before the First World War*. A pompous (and ill-informed) examiner speaks as follows: "This thesis appears most impressive. But it is concerned largely with the appropriation by the popular imagination of the fictional detective Sherlock Holmes. I know the popular fiction of the period well, and I'm sorry to have to inform the members of the examining committee that Sherlock Holmes does not exist. Conan Doyle never created any such character. The author simply made him and his supposed popularity with the public up. She apparently believed that no one on this committee would know the period well enough to expose her fraud."

**5.** Here, then, is a non-Meinongian theory of fictional characters, non-Meinongian in that it rejects the thesis that fictional characters lack being, and hence does not allow the deduction of the Meinongian conclusion that it is false that everything [unrestricted] has being. What other non-Meinongian theories are possible? I will attempt to categorize the possible non-Meinongian theories of fictional characters. I will begin by isolating the two central assumptions of the theory I have just set out. They are:

(1) Fictional characters exist or have being. (And this despite the fact that a sentence formed by prefixing the name of a fictional character to 'does not exist' can often be used to express a truth.)

(2) What appears to be the apparatus of predication in "fictional discourse" is ambiguous. Sometimes it expresses actual predication, and sometimes an entirely different relation. When, for example, we say, "Tom Sawyer was created by Mark Twain," we are using the copula 'was' to assert that the property expressed by the predicate 'created by Mark Twain' actually belongs to the fictional character Tom Sawyer. When we[31] say (and say truly), "Tom Sawyer was a boy who grew up along the banks of the Mississippi River in the eighteen-forties," we use the copula 'was' to express that other, "entirely different," relation to which I have given the name 'holding'. Tom Sawyer, in other words, belongs to the extension of the property expressed by 'created by Mark Twain'. But if we look, or God looks, at all the members of the extension of the property expressed by 'boy who grew up along the banks of the Mississippi River in the eighteen-forties' we, or He, will not come upon Tom Sawyer. We, or He, will come upon no one but the inhabitants of man-shaped regions of spacetime who are spatio-temporally related to you and

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[31] "We" who are engaged in fictional discourse. If Mark Twain had been so artless as to include the sentence "Tom Sawyer was a boy who grew up along the banks of the Mississippi River in the eighteen-forties" in *The Adventures of Tom Sawyer*, he would not have been engaged in fictional discourse—discourse *about* fiction—, and would not have expressed the proposition that we should express if we used this sentence as, say, a part of a summary of the plot of *Tom Sawyer*. (Cf. note 12.) If he had included this sentence in the book, it would there have been a sentence of fiction, not of fictional discourse, and would have expressed no proposition at all, for, when a writer of fiction writes a sentence (even a straightforward declarative sentence like this one) he makes no assertion. If someone had been looking over Mark Twain's shoulder when he wrote the sentence "Tom Sawyer was a boy who grew up along the banks of the Mississippi River in the eighteen-forties," and had said, "That's true" or "That's false," this person could only have misunderstood what Mark Twain was doing; this person must have thought that Mark Twain was writing not fiction but history.

me. There is a particular number of such filled, man-shaped regions (now forever fixed), and the size of this number cannot be, and never could have been, affected by purely literary creation of the sort Mark Twain was engaged in. Tom Sawyer, therefore, does not *have* the property expressed by 'boy who grew up along the banks of the Mississippi River in the eighteen-forties'. And yet he bears some intimate relation to it—a relation he does not bear to any of its "competitors" (for example, the property expressed by 'boy who grew up along the banks of the Rhine in the fourteen-eighties'). And this relation is such that when we say, "Tom Sawyer was a boy who grew up along the banks of the Mississippi River in the eighteen-forties," we say something that is true *because* Tom Sawyer bears that relation to that property; and it is such that if anyone said, "Tom Sawyer was a boy who grew up along the banks of the Rhine in the fourteen-eighties," what that person said would be false *because* Tom Sawyer failed to bear it to the property expressed by the predicate of that sentence. It is possible for a character to hold inconsistent properties—to have first met her only lover in London *and* to have first met her only lover in Buenos Aires, for example—but this is normally due to authorial inadvertence. (Cf. note 21.) A Meinongian object can be an impossible object, an object that literally *has* inconsistent properties (witness the round square), and Meinong would say that a fictional character who first met her only lover in London and who first met her only lover in Buenos Aires was an impossible object in just that sense. But for the non-Meinongian, for the philosopher who recognizes only one existential quantifier, this is not an option. The fact that an author can, by inexplicable accident or Borgesian design, compose a story one of whose characters first met her only lover in London and first met her only lover in Buenos Aires, is by itself enough to show that a non-Meinongian theory of fiction must distinguish having and holding (or must at any rate distinguish having from something that does the same work as holding).

I regard any theory of the ontology of fictional characters that endorses both these "central assumptions" as in fundamental agreement with mine. (I include, as part of the second assumption, the point made in note 12: declarative sentences in works of fiction are not the vehicles of assertions made by the authors of those works.[32])

Three philosophers have presented ontologies of fiction that I regard as in fundamental agreement with mine: Saul Kripke, in his Locke Lectures (delivered in 1973 but not published till 2013, when they appeared as *Reference and*

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[32] What about sentences like "It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife"—sentences in which, as it is sometimes said, the author of a work of fiction "directly addresses the reader"? In my view, it is impossible or very nearly impossible for the author of a work of fiction to address the reader "directly"—although Tolstoy certainly made a sustained effort to do so in the "philosophical digressions" in book IX, chapter 1 of *War and Peace*. In my view, a reader who has just opened *Pride and Prejudice* and is reading its first sentence is hobby-horse pretending to be reading an assertion made by the narrator of the history that is about to commence.

*Existence: The John Locke Lectures*, Nicholas Wolterstorff in *Worlds and Works of Art*, and Amie Thomasson in *Fiction and Metaphysics*. Kripke's ontology of fiction, in fact, is not only in "fundamental agreement" with mine but is essentially identical with it. (I was unaware of the existence of his Locke Lectures when I published "Creatures of Fiction" in 1977—nor had I heard any rumor of their content.[33]) *Reference and Existence* does, however, address a topic I did not touch on: "*fictional* fictional characters." Consider, for example, Aladdin, who is *not*, strictly speaking, a fictional character. In *One Thousand and One Nights*, the character Scheherazade tells a story about a young man who finds a magic lamp. That is, she *holds* the property of telling such a story. But "The Tale of Aladdin and the Lamp" is not a tale, but rather a fictional tale: just as Scheherazade holds but does not have the property "being a human being," "The Tale of Aladdin and the Lamp" holds but does not have the property "being a story." And Aladdin holds, but does not have, the property "being a fictional character." (He does, of course, have the property "holding the property 'being a fictional character'.")[34]

Wolterstorff's and Thomasson's theories are, as I say, in fundamental agreement with mine: they endorse my two central assumptions. But Wolterstorff and

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[33] Nor, apparently, had the editor of *American Philosophical Quarterly* or the person(s) to whom the manuscript was sent for review.

[34] Fictional characters are fictional persons: a fictional character is an object that holds, but does not have, the property "being a person." (A fictional character need not hold the property "being a *human* person"—witness Legolas and Gimli.) But it is not only fictional characters that hold properties. "Real" persons, for example, may hold properties: in *War and Peace* Napoleon Bonaparte saves the life of a wounded Russian named "Prince Andrei Nikolayevich Bolkonsky"—and yet Napoleon in fact never saved the life of a Russian of that name. There are, moreover, fictional dogs and horses (Lassie and Black Beauty), fictional schools (Dotheboys Hall and the Devon School), and even fictional counties and nations (Barsetshire and Yoknapatawpha County, Fredonia and Sylvania). That is, there are objects that hold (and do not have) such properties as being a dog, being a horse, being a school, being an English county, and being an American county, being a nation in central Europe. It would seem, therefore, that fictional characters are only some among the members of a larger class of objects that we may call fictional objects or fictional beings—or (the term I prefer) creatures of fiction. But how is "creature of fiction" to be defined? (We cannot define "creature of fiction" as "object that holds properties," since, for example, Napoleon holds properties but is not a creature of fiction.) I will propose a definition. Consider "causal" properties: properties such that anything that had them could interact causally with other things—"being a person," for example, or "being a school." And let us say that if an object that has no causal properties holds various causal properties, it is a creature of fiction. (Napoleon holds causal properties, yes—but he also *has* causal properties.) ("But wait. What about 'the green slime' imagined in Kendall Walton's "Fearing Fictions". Doesn't it cause fear in movie audiences? And couldn't there be fictional abstract objects—the 'supernatural numbers' in Rebecca Goldstein's novel *The Mind-Body Problem*, for example?" Well, all right—there's more to be said. But let's try to go on with what we have. This is only a footnote, after all.) Now, as was noted in the text, certain objects (fictional fictional persons) do not hold the property "being a person," but do hold the property of holding the property "being a person." We may say, then, that a creature of fiction is an object that has no causal properties but for some causal property *x* holds *x*, *or* holds the property of holding *x*, *or* holds the property of holding the property of holding *x*, *or*.... Thus, fictional fictional persons and fictional fictional fictional persons (and so forth) are creatures of fiction.

Thomasson are more specific about the nature of fictional characters than I have been.[35] My own theory has nothing to say about what larger ontological categories (other than, perhaps, "abstract object") fictional characters belong to, and I do nothing to explain "holding" beyond giving examples and hoping for the best. Wolterstorff and Thomasson, however, say a great deal about these matters, and their theories stand in instructive opposition.[36]

I will first discuss Wolterstorff's theory. According to Wolterstorff, characters are *kinds*.[37] They are kinds "maximal within a work" (or, as with Sherlock Holmes and Huckleberry Finn, maximal within two or more works). I will explain this idea through a series of definitions. (They are rough and could be refined. I do not always use Wolterstorff's technical terms.) Suppose we know what it is for a proposition to be "true in" a work of fiction.[38] We can agree, perhaps, that it is true in *War and Peace* that there are human beings, that some early-19th-century Russian aristocrats spoke French better than Russian, and that there is a man named 'Pierre Bezúkhov'. The conjunction of all the propositions true in a work we call its *world.* A proposition may *include* a kind: it does so if its truth entails that that kind has members. Thus, the proposition that some Greeks are wise includes the kinds "human being," "Greek," "wise Greek," "self-identical thing," . . . . A kind may *incorporate* a kind: kind A incorporates kind B if it is impossible for something of kind A not to be of kind B. Thus, "Greek" incorporates "human being." If a kind A is included in the world of a work, and if no other kind included in that world incorporates A, A is maximal within that work—this being the term we set out to define. It is, I should think, intuitively evident that there is a kind that incorporates "man named 'Pierre Bezúkhov' " and is maximal within *War and Peace.*

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[35] I have argued for the conclusion that "the character role" is filled, and I have made only a few very abstract remarks about the nature of the things that fill it. Wolterstorff and Thomasson also argue for the conclusion that the character role is filled; they go on to present detailed theories about the nature of the things that fill it.

[36] There are two other theories, at least, that might be described as in essential agreement with mine. One is the theory of fictional objects that Edward Zalta presents as one of the fruits of "object theory." See his *Abstract Objects: An Introduction to Axiomatic Metaphysics* and his *Intensional Logic and the Metaphysics of Intentionality*. According to Zalta, there are two kinds of predication, "exemplification" and "encoding." Exemplification corresponds roughly to what I call "having" and "encoding" to what I call "holding." But I do not regard having and holding as two sorts of predication. In my view having is predication—and predication is predication is predication, full stop. I regard "holding" as a special-purpose relation peculiar to literary discourse, a relation that happens to be expressed in ordinary speech by the words that, in their primary use, express the general logical relation of predication. (Why by the same words? See the discussion of the story of the Neolithic hunters earlier in this chapter.) It must be said, however, that Zalta's "object theory" is an immensely powerful and ambitious theory of abstract objects. If I were convinced that object theory succeeded as a general, comprehensive theory of abstract objects, I should agree that what I had called "holding" was just encoding in application to one very special sort of abstract object—fictional characters—and was therefore a species of predication. An evaluation of the general claims of "object theory," however, would take us far beyond the scope of this chapter.

The second theory is that presented by Nathan Salmon in his "Nonexistence," *Noûs* 32 (1998), pp. 277–319. Salmon's theory of fictional objects is certainly in fundamental agreement with mine. His theory of fiction, however, endorses a thesis I reject: that typical sentences contained a work of fiction (as opposed to fictional discourse) express propositions—in almost all cases false, and necessarily false, propositions—about fictional characters. According to Salmon, the sentence '"The game's afoot, Watson!" cried Holmes," written by Conan Doyle, expresses the necessarily false proposition that a certain fictional character has (not holds but has) the property of having cried out the words 'The game's afoot, Watson!'. (But Salmon does not maintain that Doyle, in writing this sentence, asserted the proposition it expresses.) *Cf. n.* 12.

[37] Kinds, according to Wolterstorff, correspond one-one to properties (and, Russellian monsters aside, a property is given by every open sentence or condition on objects, however complex), but are apparently a distinct ontological category. The kind "Neanderthal Man," for example, a kind of human being, is an abstraction, a universal—membership in it is what is universal among Neanderthals and among the members of no more inclusive class—, and it is an eternal, necessarily existent platonic object that would exist not only if there were no Neanderthals but if there were no physical world. It is intimately related to the property "being a Neanderthal," but is numerically distinct from it and from every other property.

[38] This is a marvelously subtle notion. See David Lewis's marvelously subtle "Truth in Fiction".

To be a character in a given work, Wolterstorff maintains, is just exactly to be a person-kind (a kind that incorporates "person") maximal within that work. (Thus, since there are kinds, since kinds exist—and since person-kinds maximal within works exist—, fictional characters exist.) Consider the fictional character Pierre Bezúkhov—that kind maximal within *War and Peace* that incorporates "man named 'Pierre Bezúkhov'." As every object must, Pierre Bezúkhov has a "complete" set of properties: for every property, he has either that property or its complement. He has such properties as being self-identical, being a kind, being an eternal object, being an important character in *War and Peace*, and not being a human being. He does *not* have such properties as being human, being the son of Count Cyril Bezúkhov, or having lived in the 19th century. But, of course, he does *incorporate* these properties (we may say that a character incorporates a *property* if it incorporates the kind associated with that property).[39] Wolterstorff and I, of course, mean the same thing by 'have', and "incorporation" (this is not a term he actually uses) plays the role in his theory that "holding" plays in mine. That is to say: if I were to decide that characters were kinds, I would also decide that holding was incorporation.

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[39] Certain conventions are on display in this paragraph: "A character may, without any explanation or baptismal ceremony, be referred to by a name if it incorporates the kind associated with the property of having that name"; "A character is normally referred to as 'he' if it incorporates the kind 'male'."

It should be remarked that similar conventions apply in my own theory: in particular, this one: a name can be applied to a character in critical discourse if the property of having that name is held by that character. (See note 12.) And such a name will be a full-fledged proper name. Some have apparently thought that my appeal to the existence of such a convention to explain the fact that, e.g., "Tom Sawyer" names a certain fictional character is inconsistent with the thesis that a full-bodied Kripkean theory of proper names applies to the names of fictional characters. It is not. It does not even appear to be, as far as I am able to judge. By way of analogy, imagine the following convention, another "automatic naming" convention: in a certain culture, any male baby with green eyes automatically receives, and *must* receive, the name "Robin" (but females and non-green-eyed males can also be given the name "Robin" if their parents are so inclined). Imagine that Sally, a woman of that culture, hears that the Millers have had a green-eyed male baby, and proceeds, without giving any thought to what she is doing, to refer to the new arrival as "Robin Miller," despite the fact that no one has performed a ceremony in which a name was conferred on the baby. It is obvious that "Robin Miller" in Sally's mouth is functioning as a proper name for the new child, and that nothing in this case contradicts Kripke's theory of proper names.

By being specific about the ontology of fictional characters, and by (in effect) replacing my vague, ostensively explained notion of "holding" with the relatively precise and explicitly defined notion of incorporation, Wolterstorff lays his theory open to many difficulties that my theory avoids (or puts itself in a position to respond to more easily) by the clever expedient of being vague. I will mention five.

First, there is the "Multiplicity of characters" difficulty. Wolterstorff's account implies that there are vastly more in every work of fiction that anyone would have thought. For suppose, as seems plausible, that it is true in the world of *War and Peace*, that everyone has a maternal grandfather. Then a person-kind that incorporates "maternal grandfather of a man named 'Count Cyril Bezúkhov'" is maximal in the novel; that is to say, one of Pierre's great-grandfathers is a character in the novel, even though he is never explicitly mentioned in the novel.

Secondly, there is the "Robinson twins" difficulty.[40] Suppose a story contains a reference to "the Robinson twins," but says nothing to differentiate them. Then there is *one* person-kind, maximal in the story, that incorporates the kind "being one of a pair of twins whose surname is 'Robinson'." That is to say, *one and only one* of the characters in the story is named "Robinson" and has a twin. Moreover (owing to some casual thoughts of old Santiago), a person-kind that incorporates "being named Joe DiMaggio" is maximal in *The Old Man and the Sea*. Thus, Joe Dimaggio is a character in that novel.

Thirdly, there is the fact that, if Wolterstorff is right, every property incorporated by a character is *essentially* incorporated by that character. So, for example, Lewis Carroll could not have so arranged literary matters that the character we in fact call 'Alice' was asked the riddle, "Why is a raven like a rolling-pin?" instead of "Why is a raven like a writing-desk?"; a character who was asked the latter riddle would have been a different character, even if the *Alice* books were changed only by replacing all occurrences of 'writing-desk' in *Alice in Wonderland* with 'rolling-pin'. And, assuming that characters exist in unfinished stories, the characters in unfinished stories change (not "descriptively" but "numerically": they do not come to incorporate new properties—which would be impossible—; rather, they vanish from the unfinished work and are replaced by distinct characters) almost every time the author adds to or revises his or her manuscript.

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[40] See Kendall L. Walton, review of *Worlds and Works of Art*, pp. 187–188 in particular. I believe it was Robert Howell who first discussed cases of this general kind. See Robert Howell, "Fictional Objects: How They Are and How They Aren't," *Poetics* 8 (1979), pp. 129–177.

Fourthly, there is the fact that a character who incorporates inconsistent properties incorporates all properties.[41] (And a character certainly might incorporate inconsistent properties; I have been told that one of the characters in *War and Peace* is in two places at once, and I believe it is impossible to draw a map of Barsetshire that is consistent with all the things said about its geography in the six Barset novels.)

Finally, Wolterstorff's characters are eternal, necessarily existent objects. They are thus not literally created by the authors who are normally described as their creators. Mr Pickwick, for example, exists at all times and in all possible worlds. In writing *The Pickwick Papers*, Dickens perhaps caused the entity we call 'Mr Pickwick' to have the property *being a fictional character*, but he did not bring it into existence. A corollary is: the same character could, in principle, occur in causally independent works by different authors.

I now turn to Thomasson. Her theory, like Wolterstorff's, shares my two central assumptions, and, like his theory, is much more specific than mine about the nature of fictional characters. Her theory is, as one might say, the mirror image of Wolterstorff's. According to Thomasson, fictional characters are not necessary and eternal; they are, rather, in the most literal sense, created—brought into existence—by their authors. They hold the properties they hold ('hold' is my word, not Thomasson's) for the most part accidentally: Tom Sawyer, the very character that is in fact called 'Tom Sawyer', might have had only nine toes; Alice, she and not another, might have grown taller before she grew smaller. Fictional characters, Thomasson tells us, are "abstract artifacts" and seem to differ from ordinary or concrete, material artifacts mainly in being abstract: their causal, temporal, and modal features are remarkably like those of concrete works of art, such as paintings and statues. When we compare Thomasson's Tom Sawyer with Wolterstorff's, the advantages seem to be all on Thomasson's side. The way she tells us is the literally correct way to talk about fictional characters is the way we do talk about fictional characters, for we talk of Mark Twain's creating Tom Sawyer, and we talk as if Tom did not exist before Mark Twain created him and would not have existed if Mark Twain had not created him. In Thomasson's view, the creativity of an author is literally creativity; in Wolterstorff's view (as in the Meinongian's), the creativity of an author is something more like an ability to find interesting regions of a logical space, regions that exist independently of the author and, indeed, independently of the whole of concrete reality. Wolterstorff's authors confer the status "fictional character" on eternal, necessarily existing kinds; Thomasson's authors *make* things.

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[41] My own theory, as it is presented in "Creatures of Fiction," faces the same difficulty, owing to my perhaps unwise stipulation that "ascription" was closed under entailment. But I could have avoided the difficulty by refraining from making the stipulation, or restricting it in some way. It would not be at all easy for Wolterstorff to modify his theory in such a way that it does not have this feature.

Thomasson's theory is certainly appealing. It has been anticipated by a well-known authority on fiction:

> And as imagination bodies forth
> The forms of things unknown, the poet's pen
> Turns them to shapes and gives to airy nothing
> A local habitation and a name.[42]
>
> —*A Midsummer Night's Dream*, 5, I

The only problem I can see with this appealing theory is that it is not at all clear that it is metaphysically possible. Can there really be abstract things that are made? Some might find it implausible to suppose that even God could literally create an abstract object. Only God can make a tree, granted, but can even God make a poem—that is, cause the object that is the poem to begin to exist? (I think it is clear that Thomasson has no special problem in this area as regards fictional characters; if an author can bring a poem or a novel—as opposed to a manuscript—into existence, there would seem to be no reason to suppose an author could not bring a character into existence.) One very plausible argument for the conclusion that it is possible to bring abstract objects into existence is provided by sets. If I can bring any objects into existence, it would seem that I can bring sets into existence. If I bring A and B into existence, then, surely (if there are sets at all), I bring the set {A, {A, B}} into existence, for the existence of that set supervenes on the existence of A and B. And that set is certainly an abstract object. (To adapt a point of Nelson Goodman's, nothing in the world of "nominalistically acceptable things" could ground or explain the non-identity of the set {A, {A, B}} with the set {B, {A, B}}.) Similarly, one might suppose, if the existence of characters supervenes on the existence of, say, manuscripts, and if an author can bring a manuscript into existence, then the author can thereby—*must* thereby—bring certain characters into existence.

But this analogy is not decisive. Uncontroversial examples of abstract objects other than sets (not themselves wholly uncontroversial—witness Goodman) that can be brought into existence might be hard to find, and Thomasson's abstract artifacts are nothing like sets. (Sets have the wrong properties. If a character were, say, a set of linguistic items of some sort, characters would have properties more like those Wolterstorff's theory ascribes to characters than those Thomasson's theory ascribes to characters.) Thomasson, in fact, appeals to another sort of analogy:

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[42] If what has been said earlier in this chapter is correct, Shakespeare did not, in writing these words, affirm the proposition that as imagination bodies forth the forms of things unknown, the poet's pen turns them to shapes and gives to airy nothing a local habitation and a name. Still, I expect he accepted it.

> . . . it is a common feature of many cultural and institutional entities that they can be brought into existence merely by being represented as existing. Just as marriages, contracts, and promises may be created through the performance of linguistic acts that represent them as existing, a fictional character is created by being represented in a work of literature. (Thomasson 1998)

But is it evident that when two people marry, or when a promise or a contract is made, an object called a 'marriage' or a 'promise' or a 'contract' thereby comes into existence? It seems to me to be much more plausible to say that in such cases "all that happens" is that things already in existence acquire new properties or come to stand in new relations: the property *having promised to teach Alice to drive*, for example, or the relation *is married to*. If I say that this is "all that happens"—that no new things come into existence in such cases—I commit myself to the thesis that quantificational sentences like 'Some marriages are happier than others' and 'I have promises to keep' and 'A contract made under duress is not binding' can be paraphrased as sentences whose variables range only over people, properties, relations, times, and such other things as we were probably going to have to "quantify over" in any case. It seems to me very plausible to suppose that the required paraphrases are possible. And if they are not possible, if we find that we must quantify over, say, marriages, what would be so objectionable about regarding a marriage as an abstract object?—a set, say, that contained two human beings of marriageable age and nothing else: a "marriage" would be said to be "in force," or to "have been entered into," or some such suitable phrase, at a moment just in the case that its members then became married to each other. *I* certainly have no strong tendency to believe that when Alice and James marry, a new object called 'their marriage' comes into existence. If no such new object does come into existence, this might be because there *never* is any such object as their marriage, or it might be because, although there is such an object as their marriage, it existed before they were married and "was entered into" by them at the moment they were married. I'm not sure whether there is a "right" or "wrong" in these matters, and if there is, I have a hard time seeing why it would be of any great philosophical importance what was right and what was wrong if the question were being considered for its own sake. What is of some philosophical importance is this: it is not a philosophical *datum* that "many cultural and institutional entities . . . can be brought into existence merely by being represented as existing." And we are therefore left without any strong reason for believing that it is metaphysically possible for anything to have the properties Thomasson ascribes to "abstract artifacts." I hasten to add that I know of no strong reason for thinking that it is *not* possible for anything to have these properties.

Wolterstorff's theory is unintuitive in many respects (it cannot be reconciled with many of the things we are naturally inclined to believe about fictional entities), but it asks us to believe only in things that we, or the Platonists among us, were going to believe in anyway. Thomasson's theory respects what we are naturally inclined to believe about fictional entities, but it achieves its intuitive character by, as it were, brute force: by postulating objects that have the features we are naturally inclined to think fictional entities have. The metaphysical possibility of objects having the requisite combination of properties is supported only by analogy to "cultural and institutional entities," and I have given reasons for being skeptical about whether there really are any such things, and reasons for at least some uncertainly about whether, if there are, they have the properties they must have to serve as the other term in Thomasson's analogy.

If what I have said is correct, then, although there are good reasons for believing that there are such things as fictional characters, existent objects that bear some relation that is not "having" to properties like "committed suicide by throwing herself under a train" and "was born on the banks of the Mississippi in the eighteen-thirties," the question of the metaphysical nature of these objects (whether, for example, they are eternal and necessarily existent) is very far from having been given a decisive answer.

Since, however, I am very strongly inclined to think that abstract objects are necessarily existent, I am very strongly inclined to accept a metaphysical account of creatures of fiction that is much more like Wolterstorff's than it is like Thomasson's. Here is one possibility that is at present a live option for me: A creature of fiction is a causal property maximal within a work[43]—the definition of this phrase being adapted from Wolterstorff's definition of 'person-kind maximal within a work'. A fictional character is a creature of fiction that entails the property "being a person." A creature of fiction holds a property just in the case that it entails it. An object *x* that is not a creature of fiction holds a property just in the case that there is a creature of fiction that holds that property and also holds the haecceity of *x*. (So, for example, Napoleon Bonaparte holds the property "saving a wounded Russian prince" owing to the fact that there is a fictional character in *War and Peace* that holds both "saving a wounded Russian prince" and "being Napoleon Bonaparte." We might wish to refer to this character by some such phrase as 'Napoleon's fictional counterpart'—'Napoleon$_F$ ' for short. We could then say that an entity that is not a creature of fiction holds a certain property just in the case that it has a fictional counterpart that holds that property. And we can say that, for example, Saul Kripke "appears in" Rebecca Goldstein's novel *The Mind-Body Problem* owing to the fact that a character in that novel—Saul Kripke$_F$—holds the property "being Saul Kripke." (Of course, neither Saul Kripke nor Saul Kripke$_F$ is Noam Himmel, the character in *The Mind-Body Problem* who is *modeled on* Saul Kripke. Noam Himmel *has* the property "being modeled on Saul Kripke" and does not hold the property "being Saul Kripke."))

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[43] Or within more than one work. In the sequel, I will ignore this possibility.

Were I to accept the theory I have too briefly outlined, of course, I should have to think about the many difficulties that attend it—close analogues of the five difficulties I mentioned in connection with my statement of Wolterstorff's theory.

**6.** What we have said about fiction can be applied with only minor modifications to tales belonging to other genres—such as myth and legend and folklore. I will consider only myth. If we have good reason to suppose that fictional characters exist, we have equally good reason to suppose that mythical beings exist—the gods of the various polytheisms of the ancient Mediterranean world, centaurs, dragons, Cyclopes, Frost Giants, Yggdrasil, Leviathan, Pandora, Gilgamesh,.... For we have sentences that express truths and are naturally read as "quantifying over" such entities, sentences like

> There are gods in the Babylonian pantheon who have no counterparts in the Greek pantheon

and

> Many mythical beings, even if they do not have magical powers, are physically impossible. For example, giants violate the square-cube law, and the amount of air that could be taken in through a centaur's human mouth and nostrils would not provide an animal of that size with sufficient oxygen to support its metabolic processes.

There are many possible ways to account for the truth of these sentences (that is, to account for the truth of the propositions they would express in the contexts in which they would be likely to be spoken or written). A proponent of substitutional quantification,[44] for example, might understand the first of these two sentences as the vernacular counterpart of

> $\Sigma x \sim \Sigma y$ ($x$ is a Babylonian god & $y$ is a Greek god & the salient properties of $y$ are much like the salient properties of $x$).

(Where 'Σ' is the "particular quantifier"—the substitutional counterpart of the so-called objectual existential quantifier.) But suppose we accept the existence of fictional characters. It is not entirely implausible to regard mythical beings as a special kind of fictional character. True, we normally apply the word 'fiction' only to stories composed in their entirety by particular human beings—as opposed to stories that "just growed." But there seems to be no important logical difference between myths, on the one hand, and novels, narrative poems, plays, and short stories on the other. (After all, *mythos* is simply the Greek word for 'story'.) If myth is thus assimilated to fiction, the mythical bird the Phoenix is a fictional bird (like Long John Silver's parrot Captain Flint) and the mythical tree Yggdrasil is a fictional tree (like the White Tree). And we can understand the first of our illustrative sentences as meaning something like

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[44] We shall discuss substitutional quantification in Chapter V.

> $\exists x \sim \exists y$ ($x$ is a mythical being & $y$ is a mythical being & $x$ holds the property "being a god" & $y$ holds the property "being a god" & $x$ figures in the Babylonian myths[45] & $y$ figures in the Greek myths & $y$ plays a role in the Greek myths that is similar to the role that $x$ plays in the Babylonian myths).

I conclude the linguistic data provided by fiction and myth (and legend and folklore) do not imply that there are things that do not exist.

7. I have examined seven candidates for the office "thing that does not exist." My response to the first six of them, you will recall, was "There is no such thing as that." My response to the seventh and final candidate—any fictional or mythical or legendary being you might choose—has been "That does too exist." I therefore maintain that I have never been shown an example of something that does not exist. And since—I maintain—the following chain of deductions is valid

There are things that do not exist

*hence,*

$\exists x$ $x$ does not exist

*hence,*

$\exists x \sim x$ exists

*hence,*

$\exists x \sim \exists y\, y = x$,

*hence,*

$\exists x\, x \neq x$,

the idea that there are things that do not exist is self-contradictory and should be abandoned.

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[45] "Marduk figures in the Babylonian myths" can be understood on the model of "Pierre Bezúkhov is a character in the novel *War and Peace*."

# III

# Being and Abstraction

**1.** The ontological method on display in Chapter II was that recommended in Chapter I. In this chapter, that method will be applied to the problem of universals—or, to use language that has a more up-to-date ring—the problem of the existence of abstract objects.

The original understanding of 'universal' was this: that which is "universal" among the members of a class—the "instances" of the universal—and accounts for their membership in that class. Humanity, for example, is a universal, for the word 'humanity' designates that which is common to all members of the class of human beings (and does not designate that which is common to the members of any class having members that are *not* human beings). A given human being (it was said) belongs to the class of human beings because he or she possesses, has, exemplifies, or is an instance of, humanity. And therefore (it was said), a universal is what is "shared" by the members of a class—but not 'shared' in a sense that implies mereological overlap, for the members of a class do not, as a general rule, have parts in common.

As to "abstract objects"—what the term means is a difficult question, and I have very little to say to alleviate the skepticism of those philosophers (David Lewis, for example) who doubt whether the term has any meaning at all. But I will try to say something. Let us treat 'abstract' and 'object' separately and then try to combine the results.

The original philosophical home of the adjective 'abstract' was in the phrase 'abstract idea', a phrase that occurs much earlier in the history of philosophy than the phrase 'abstract object'.[1] An abstract idea is, of course, an idea that applies to many particular things. An abstract idea was, Locke thought, formed in one's mind by one's observing many particular things and thereby forming, at least momentarily, many "complex" ideas, each applying to a particular thing, and then leaving out[2] what was not shared by the many complex ideas of the individual particulars. No doubt this theory is not workable; no doubt it presupposes what is to be explained; perhaps it is incoherent. I am not interested in Locke's theory of the formation of abstract ideas, but rather in the concepts he uses in his attempts to state it. There is a term he cannot avoid using at at least one point in his

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[1] The phrase 'abstract object' is an astonishingly recent coinage. To the best of my knowledge, it was invented by Quine.

[2] '*Abstractus*, *-a*, *-um*' is the past participle of '*abstrahere*', "to draw off" or "to draw away."

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discussion. In *Essay* III. III.7 and 8 there is a little semantical island in which the word 'quality' is used several times (and the word 'property' once, to express the same meaning), a word that does not occur in surrounding passages, but whose employment in 7 and 8 is such that the passages succeeding those sections would make no sense if it had not been used as it was in 7 and 8. Qualities (or properties) do not seem themselves to be ideas: they are what (one finds) is common to the several complex ideas one is considering when one begins to abstract; they are what one discards (some of them, the ones not common to the several complex ideas) and what one leaves in place (others of them, the ones common to the complex ideas) when one is abstracting. Locke cannot say what he wants to say unless he supposes there to be items that play this role, the "quality" role, the role "that which can be removed from an idea to make that idea (or to produce a new idea that is) more abstract."

For Locke, therefore, the idea of a quality is and must be distinct from the idea of an idea. Despite centuries of commentary on "Locke's theory of ideas," it is still not clear (at any rate, it is not clear to *me*) what sort of thing Locke thought an idea was. But it is clear what the "qualities" that figure in the process of abstraction are: they are universals. They are universals that are somehow components of ideas—the same quality can be a component of ideas present in my mind and of ideas present in yours—and which are somehow presented *to* the mind in virtue of the presence of ideas *in* the mind. The more abstract ideas—never present in the mind owing simply to sensation, but formed in the mind by operations, native to the mind, on the ideas that sensation writes on the mind's tabula rasa—are simply those that present fewer qualities to the mind than do the less abstract ideas. There is, therefore, for anyone whose primary use of 'abstract' is in the phrase 'abstract idea', something inherently "abstract" about the notion of a quality or universal, since the process of abstraction tends in the direction of ideas that present fewer qualities (that perhaps present only a single quality) to the mind. I say "for anyone" because my point has nothing to do with those of Locke's theses that separate him from other philosophers who have spoken of abstract ideas—it has, for example, nothing to do with Locke's thesis that there are no innate ideas. Even if some abstract idea was not ultimately supplied to us by the senses, even if we did not form it by some process of abstraction from the data of sensation, it would seem to be impossible to explain what we meant by calling it an abstract idea without appealing to the notion of a quality, attribute, characteristic, feature, or property. An abstract idea, whatever its source, must be an idea that has as components (in whatever sense ideas have qualities as components) fewer qualities than a concrete, or relatively concrete, idea. How can we explain what we mean by saying that "solid object" is an abstract idea and "plough" a (relatively) concrete idea other than by saying that things to which the idea "plough" applies must have every quality had by things to which the idea "solid object" applies, and that the reverse is not true—is, in fact, very far from being true?

If the first appearance of 'abstract' in modern philosophy was in the phrase 'abstract idea', therefore, it is not hard to see how the word in due course became associated with universals (or "qualities" or "attributes" or "properties" or "characteristics" or "features"). It is, therefore, understandable that universals should be called *abstract* objects. But why abstract *objects*?

The term 'object' was originally opposed to 'subject': an object was originally the object of a person's, a subject's, act of perception or cognition. But its use has become more abstract—that is to say, more general. It has, in fact, become as general as a use can. In the use of mathematicians, logicians, and (some but not all) philosophers, the word is simply an unrestricted count-noun, a count-noun of maximal generality. An object is anything that can be the value of a variable, that is, anything we can talk about using pronouns, that is *anything*. That is to say: the word 'object' can be, and often is, so used that any substitution-instances of the following pair of schemata are equivalent:

$\forall x\ (x \text{ is an object} \rightarrow \mathrm{F}x) \qquad \forall x\ \mathrm{F}x;$

(It follows that any substitution-instances of

$\exists x\ (x \text{ is an object } \& \ \mathrm{F}x)$

and

$\exists x\ \mathrm{F}x$

are also equivalent.)

Thus, the word 'object' is a mere stylistic convenience: anything we can say using this word we can say without using it; it can be dispensed with in favor of variables—or pronouns. 'Object' is not the only word of this kind: we also have 'thing', 'entity', 'item', and, perhaps, 'being'. Ordinary speakers have followed the mathematicians and philosophers down the path of abstraction: 'object' in ordinary usage can mean (among other things, of course) simply 'thing'. It is true that there is a pragmatic difference in ordinary usage between 'object' and 'thing': to call something either an 'object' or a 'thing' carries the "conversational implicature" that it is not a person, that it is perhaps even inanimate, but the implicature is weaker in the case of 'thing'.[3] (We should be clear that the association of 'object' and 'thing' with the impersonal and the inanimate is a matter of pragmatics, not semantics. Witness this dialog: “We’ll have to jettison some heavy object if we’re to remain aloft.”; “How about Fred?.”)[4]

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[3] We should have different expectations of science-fiction movies entitled "The Object from Outer Space" and "The Thing from Outer Space": we should expect the former to be about an *inanimate* object from outer space and the latter to be about a living organism from outer space. (The *frisson* the title "The Thing from Outer Space" is intended to effect is no doubt to be accounted for by this

The answer to the question, “Why abstract ‘object’?,” therefore, can only be something along these lines: “Well, why not? What else would you call them? You’re not ascribing anything to them by calling them that, because ‘object’ is without content.” If Frege’s notorious distinction between “*Gegenstand*” and “*Begriff*” could be made sense of, there would be things to oppose “objects” to, and what I have said would be wrong. But—if a very small philosopher may bring this charge against a very great philosopher—this distinction cannot be made sense of. Frege’s philosophy cannot be stated without generalizing over concepts, and the validity of the following schema cannot be escaped by any sort of logical or conceptual wriggling: to generalize over [plural count-noun] is to treat [plural count-noun] as objects.[5] It should, moreover, go without saying—but I had better say it—that italics can make no substantive contribution to the content of a philosophical thesis: the philosopher who has not given a definition of ‘object’ and who says, for example, “I think there are numbers, but I deny that they’re *objects*” is saying nothing at all.[6]

**2.** In the previous section, I explained why, in my opinion, it was natural to call universals or properties abstract objects. (In the sequel, I shall generally prefer ‘property’ to ‘quality’.) But we call other things than properties abstract objects. In the writings of those philosophers who use the term ‘abstract object’, numbers provide, perhaps, the *standard* example of abstract objects, and propositions and sets are pressed into service as examples of abstract objects almost as often. And something like the following statement is a commonplace in discussions of modal ontology: Most philosophers of modality apply the term ‘possible world’ to certain abstract objects, but David Lewis’s “possible worlds” are not abstract objects.

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consideration: “The organism that comes from outer space in this movie is so far removed from our ordinary experience that one who had experienced it would be willing to apply some general term to it only if that term ‘automatically’ applied to everything.”)

[4] Some philosophers oppose ‘object’ and ‘event’. I do not.

[5] If you want to represent this harmless and self-evident thesis as philosophical lunacy, here is the recipe: apply a superficial (that is, purely syntactical) criterion to determine whether someone is “generalizing over [plural count-noun],” but a deeper, more serious criterion to determine whether someone is “treating [plural count-noun] as objects.” For example:

> Just because Nurse says, “Now, children, smiles are better than frowns,” it doesn’t mean she’s treating smiles and frowns as objects.

Yes, but it doesn’t mean she’s generalizing over smiles and frowns, either.

[6] “When I say that numbers are not *objects*, my use of italics is intended only to emphasize the fact that they’re not material things [not extended in space; not in space and time; without causal powers].” But why use ‘not objects’ to express any of these ideas? “When I say that numbers are not *objects*, my use of italics is intended only to emphasize the fact that they’re not objects in the way chairs are objects.” But what is meant by ‘in the way chairs are objects’? Nothing that I can see. A philosopher is, of course, free to use ‘object’ in any sense he or she likes, but there’s nothing about the native or intrinsic or pre-analytic meaning of ‘object’ that militates against its being used as I use it: as a count-noun of maximum generality.

And yet numbers and propositions and sets and "non-Ludovician" possible worlds are not in any obvious way related to the process by which the mind forms abstract ideas. (We do not form the idea "solid body" from ideas like "plough" and "boulder" by stripping numbers or propositions or pure sets or possible worlds away from the latter.) Why then do we call these other things abstract objects?[7] The answer would seem to be that we recognize some sort of ontological affinity between properties (on the one hand) and numbers and propositions and sets and possible worlds (on the other)—assuming that we believe that there are things of all these sorts. If we believe that there are things of these sorts, they seem to us to be united by their common contrast to certain other objects, objects to which we give the conventional name "concrete."

What, then, is an abstract object? How do abstract objects differ from the "concrete" objects to which they are usually opposed?[8]

It is easy enough to give examples of concrete and abstract objects—although whether any particular item in a proposed list of abstract or of concrete objects exists may be controversial.

Here is a list of names and general terms such that anything that is denoted by these names or falls under these terms—if anything does—is a concrete object: the Eiffel Tower, artifacts, the present king of France, rocks, lions, Uranus (god or planet), the golden mountain, elves, Descartes's soul, angels, God.

Here is a list of names and general terms such that anything that is denoted by these names or falls under these terms—if anything does—is an abstract object:

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[7] In posing this question, I assume that "these other things" are *not* properties. But this assumption could be disputed. Perhaps, for example, numbers are properties. Perhaps the number three is the property "being a three-membered set." It is to my mind not very plausible to suppose that one could construct a workable ontology that "identified" *every* abstract object with some property. It is rather more plausible to suppose that one who contended that the only abstract objects were properties (or, better, relations, properties being conceived as monadic relations) could devise a workable way of eliminating apparent reference to and apparent quantification over "these other things" by systematic paraphrase. I am myself inclined toward such an ontology of abstract objects.

[8] The word 'concrete' is derived from the Latin *concretus*, the past participle of *concresco*, a versatile verb meaning, among other things, to grow together or to congeal. (Thus, the stuff concrete is bits of sand and gravel held together by cement.) The earliest meaning of the English adjective is something like 'composite' or 'compound'. I reproduce, for what it is worth, one of the senses listed by *The Oxford Universal Dictionary*:

> 4. *Logic* and *Gram*. Applied to a quality viewed *concreted* or adherent to a substance, viz. the adjective; thus *white* (paper, etc.) is the concrete quality, as dist. from *whiteness*, the abstract quality. (1528)

This sense would seem to be relevant to our investigation, but I cannot claim to understand it. The sentence '*white* is the concrete quality' is syntactically correct only if 'white' is a noun. If 'white' is a noun, it means 'the color white'. And I do not know what 'the color white' could be if not the property whiteness. And, therefore, 'white' names an "abstract quality" if 'whiteness' does—and 'whiteness' *does* name an abstract quality if it names anything. The parenthesis '(paper, etc.)' does not help; indeed, it makes matters worse, for it forces 'white' to be an adjective, thus making nonsense of the sentence '*white* is the concrete quality'.

the real line, properties, relations, 1 divided by 0,[9] propositions, sets,[10] novels (as opposed to tangible copies of novels), the color of the eyes of the present king of France, the General Theory of Relativity, kinds, the mixolydian mode.[11]

It will be noted that, in giving these examples, I am not supposing that any of the words I have listed actually to apply to anything. (I have emphasized this point by including in each list some phrases that, by general agreement, do not apply to anything.) What I have said is not supposed to imply that there are elves or that there are kinds. And, of course, the terms in each list are not supposed in every case to exclude one another. The Eiffel Tower (if there is such a thing) is an artifact (if there are such things). The General Theory of Relativity (if there is such a thing) may be a proposition (if there are such things), and kinds (if…) may be properties (if…). (From now on, I will leave it to the reader to attach the appropriate existential disclaimers to my examples.) Is there anything to be learned from these lists? Do they suggest some sort of definition of the abstract and the concrete, or some way to draw an informative line between the two (supposed) categories?[12]

One obvious suggestion—at least it seems obvious to me—is this: abstract things are things that have *instances*, and concrete things…well, they don't have instances; they simply *are*. There is the novel *War and Peace*, for example, and then there are all the copies of *War and Peace*, which are its instances. Two different tunes, or two occasions of their performance on the flute, may be instances of the mixolydian mode. Six different textbooks on gravity may contain six different formulations of the General Theory of Relativity. The property aridity has both Arizona and Libya as instances. Denmark and Italy (on the one hand) and Montreal and New York (on the other) are distinct instances of the relation "to the north of." The number four numbers the Stuart kings of England, the points of the compass, and the canonical Gospels. Pocahontas and the Parthenon and the pulsar PSR J1748-2446ad, however, do not have instances:

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[9] Quine's example of a non-existent mathematical object—or, more exactly, of a non-denoting phrase that represents itself as denoting a mathematical object.

[10] One version of set theory has this consequence: if there are concrete objects, some sets are concrete objects: each unit set whose member is a concrete object. According to this version of set theory, everything is a set, but some sets are special in that they are identical with their unit sets (or with their own sole member). Such sets are *individuals*; presumably all concrete objects are individuals. See W. V. O. Quine, *Set Theory and its Logic*, pp. 30–31.

[11] Some terms might be placed in either list (or the scrupulous might refuse to include them in either list) because they are ambiguous: sometimes they denote concrete objects (if anything) and sometimes abstract objects (if anything). 'Novels' *can* be used to refer to copies of novels. 'Events' is a well-known philosophical example: in Davidson's use, the word purports to refer to concrete objects, and in Chisholm's use to abstract objects. The scrupulous list-maker, moreover, might refuse to include a phrase in either list because of his awareness of his own ignorance of what the phrase denotes: 'Frege's favorite example of an object in his private thoughts'.

[12] Compare the following with section 1.7 (pp. 81–86) of David Lewis's *On the Plurality of Worlds*.

they simply *are*. If this idea is right, it suggests an explanation of our calling these things “abstract”: we call them that because we think (or because some philosophers have thought) that they’re known by abstraction from their instances.

This obvious suggestion is not without its problems. For one thing, it fits sets rather badly: in what sense is a particular ant an “instance” of the set of insects? And then there is the empty set; there are not even any candidates for the office of *its* instances. The empty set can be looked upon as mere notational convenience, however; perhaps—although there are sets—there is no empty set. But what then of uninstantiated properties, like the missing shade of blue or being a 20th-century French monarch? It is not easy to maintain that there are properties but no uninstantiated properties.[13] Is an abstract object perhaps something that *can* have instances? If we accept that suggestion, what shall we say about impossible properties, like being the greatest prime or being both red and green all over (or, if Kripke is right about natural kinds, like mermaidenhood)? Are there perhaps no impossible properties, although there are uninstantiated but possible ones? On what ground shall we, once we have conceded that there are uninstantiated properties, say that there are no impossible properties—other than the ground that taking this position enables us to say that every property can have instances? And what about propositions? What are *their* instances? Truth-values? Possible worlds? “Arrangements of objects” (whatever those may be)?

A second suggestion about how to distinguish abstract objects from concrete objects is this: concrete objects are in space and time, and abstract objects are not. This idea, however, founders on the fact that God, that object than which nothing could be more concrete, is not in space, and, according to many theists, not in time. “But, if God indeed exists and is not in space and time, why must you classify him as a concrete object? If he’s not in space and time, as all our paradigmatic examples of concrete objects are, why not call him an abstract object? Or perhaps the concept of God is an incoherent concept, and to fall under that concept, an object would have to be both abstract and concrete. Or perhaps God—who, if he exists, is certainly very different from all other beings—is *both* abstract and concrete: the sole being who combines those two properties (as the number 2 is the sole number that is both even and prime).” I shall return to these questions presently.

A third suggestion about how to distinguish abstract objects from concrete objects is this: abstract objects exist necessarily, and abstract objects exist only contingently. This idea, however, founders on the fact that God—at least according to most theists who understand the ideas involved in the assertion—exists necessarily. “But, if God indeed exists necessarily, why must you classify him as a concrete object? If he exists necessarily, and all our paradigmatic examples of concrete objects exist only contingently, why not call him an abstract object?" Again, I shall return to this question. Before I do, however, it is worth noting that it is not at all clear whether all abstract objects exist necessarily. It seems plausible enough to suppose that numbers and pure sets and "purely qualitative" properties and "purely qualitative" propositions exist necessarily (if they exist at all). But what about the set {Goodman, Quine}? What about the property of being identical with Plato? What about the proposition that Socrates is not identical with Aristotle? There are philosophers who believe in some of, indeed all, the things in this list, and, if there are such things, they would seem to be abstract objects. And yet their status as necessarily existent objects is not beyond dispute. (Some, for example, would say that Socrates and Aristotle are essential "constituents" of the proposition that Socrates is not identical with Aristotle, and that this proposition could therefore not exist if they did not.) Another sort of example is provided by literary works: the novel *War and Peace* would seem to be an abstract object, and only some of the philosophers who believe that the phrase 'the novel *War and Peace*' denotes an object believe that it denotes a necessarily existent object;[14] but it would be hard to maintain that it denoted a concrete object.[15]

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[13] Well, some philosophers—Aristotle, for example—have found it easy enough. I will defend the view that there are uninstantiated properties later in this chapter.

Let us now return to our question about God. If God is without spatial properties (and, *a fortiori*, if he is without either spatial or temporal properties), why should he not be regarded as an abstract object? The reason is simple enough: whatever his relation to space and time may be, God *does* things; he makes things happen, and that is just what numbers and properties and propositions do not do. (Gödel once said that the axioms of set theory forced themselves on the mind as true. But I don't suppose he thought that the power-set axiom could *cause* things to happen in a human brain.[16]) Novels may be influential, and novels may be

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[14] This is not to say that the philosophers who believe that 'the novel *War and Peace*' denotes a necessarily existent object believe that it denotes something that is necessarily a novel—much less a novel entitled *War and Peace*. They would maintain, rather, that these properties were conferred on it by certain contingent activities of Tolstoy. Compare: 'That "Brouwer's Fixed Point Theorem" denotes a necessarily existent object does not imply that that object was necessarily proved by Brouwer, much less that it is necessarily called "Brouwer's Fixed Point Theorem"'.

[15] But see the discussion of Amie Thomasson's work in Chapter II.

[16] Here is a more colorful example. Sir Donald Francis Tovey has written

> Perhaps the most dramatic case of purposeful surprise is the C-sharp which bursts in so savagely upon the conspiratorial laughter of the first theme of the Finale. This violent note is a stranger to the audience, but seems to be no stranger to the orchestra, who greet it with cheerful uproar. After the Finale has gone through many adventures and the first theme has returned with the apparent purpose of making itself comfortable in a quiet coda, this strange note bursts in again, and insists upon being taken seriously. When doubt is cast on this claim, the note becomes very angry. From this a return to the tonic is attained only through strong representation, which perhaps, as a stretch of courtesy, we may call diplomatic.

(Quoted in the Program Notes accompanying a performance of the San José Symphony Orchestra in February 2000. The work under discussion is Beethoven's Eighth Symphony. No citation is given, but the passage is from an unfinished work on Beethoven, published after the author's death. The wording of this passage in the version of the text that is available on the Internet differs in minor ways from the wording of the Program Notes. The anonymous author of the Program Notes appends this sensible abstract objects, but this does not mean that abstract objects exert causal influences on human beings. What a novel's "influence" consists in is this: an author causes a manuscript of the novel, a concrete embodiment of the novel, to exist[17] (and not by first establishing some sort of causal relation with the novel, not by discovering it in logical space with a modal telescope and transcribing what he or she sees through the lens of that device), and presents that manuscript to a publisher—and you can take the story from there. These reflections suggest a third way of making the distinction between concrete and abstract objects: concrete objects are those that can enter into causal relations and abstract objects are those that cannot. If there are other beings than God that are not in space and time but can enter into causal relations, then those beings are concrete objects. If other necessarily existent beings than God can enter into causal relations, then those beings are concrete objects. (Of course, it might be that only things that can enter into spatio-temporal relations can enter into causal relations; and it might be that it is impossible for necessarily existent things to enter into causal relations. That's as may be. Either of these theses might be true or both, but they cannot be taken as self-evident.)

Suppose, then, that we decide to define a concrete object as an object that can enter into causal relations,[18] and an abstract object as an object that is incapable of entering into causal relations.[19] (More exactly, an abstract object will be one that enters into causal relations in no possible world, and a concrete object will be an object that enters into causal relations in at least some possible worlds.[20]) This definition will be no clearer than the idea of "entering into causal relations."

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remark to the quotation: "Now of course musical notes cannot be angry or insist on being taken seriously, but Tovey does capture something of the boisterous and overexcited emotional energy of the movement.")

[17] At any rate this used to be the case, back in the days when novelists wrote with pens and typewriters. Exercise for the reader: bring the account of what a novel's influence consists in up to date.

[18] Compare the definition of 'real things' ('τὰ ὄντα') offered by the Eleatic Stranger at *Sophist*, 247E.

[19] I take the relata of "causal relations" to be substances (billiard balls, electrons, cats, white dwarf stars...) and not "events." I am, in fact, very doubtful whether there are any such things as events. I doubt, for example, whether, if Chloe becomes hungry at noon there is an object (called 'Chloe's becoming hungry at noon' or 'Chloe's acquisition of the property *hunger* at noon') that is "automatically generated" by her becoming hungry at noon. (In my view, the phrase 'her becoming hungry at noon' in the preceding sentence is not a denoting phrase.) My paradigms of causal relations are relations like those expressed (in typical contexts) by verbs and verb-phrases like 'strikes', 'runs into', 'attracts', 'smashes', 'cures... of her insomnia', 'lends money to', and 'work together to suppress the propaganda of': things that one substance (or several substances, acting collectively) can do to another substance or other substances. There are, of course, many such relations. (The disjunction of all causal relations—perhaps expressed by 'interacts causally with'—is certainly not the relation that most philosophers who use the word 'causation' intend that word to denote.) If causal relations hold only between substances and if 'concrete object' is defined as 'object that can enter into causal relations', it is true by definition that the only concrete objects are substances. For reasons given below in the text, although I think it may well be true that the only concrete objects are substances, I regard this is a substantive metaphysical thesis, and I do not want to make it true by definition.

[20] Most concrete objects fail to exist in some possible worlds, and obviously, they do not enter into causal relations in those worlds in which they do not exist. It is not, moreover, evident that a concrete object must enter into causal relations in every world in which it exists. Most theists believe that God

My paradigm of objects entering into causal relations is (and I suspect most philosophers employ a similar paradigm) that of billiard balls bouncing off one another. But the idea is not as clear as it might be. The relation of mutual gravitational attraction that, according to Newton's inverse-square law of gravitation, obtains between any two massy bodies is as clear a case of a causal relation as anything could be; but is there not some sense in which the number 2 "enters into" this relation—since the law is an inverse-*square* law? I want to say not. I want to say that only the massy bodies enter into the relation, and that the number 2 enters only into the quantitative *description* of the relation. But this inclination of mine, considered as an argument, is pretty feeble. Let us, however, assume that we understand the idea of "entering into a causal relation" well enough to go on with, and let us assume that our definition is extensionally correct. Even if the definition is extensionally correct, it does not seem to me to be much of a definition. It does not really seem to provide an explanation of the distinction between abstract and concrete objects. If it is a fact that all and only abstract objects are incapable of entering into causal relations, and if it is a fact that all and only concrete objects are capable of entering into causal relations, these facts seem to me to be facts that a proper understanding of the abstract/concrete distinction should *explain*. The case seems to me to be like this: suppose that someone should propose to define a "word" as something that can be correctly or incorrectly spelled. This "definition" may well be extensionally correct (at least if we neglect the fact that there are and have been many languages that have no written form or whose written form is logographic or otherwise non-alphabetic): perhaps the class of words and the class of things that can be correctly or incorrectly spelled are the same class. Even if this is so, the definition does not seem to be much of a definition. A real definition of 'word', a definition that really enabled us to understand what a "word" was, would—among other sorts of light it shed on the concept *word*—enable us to understand why words and words alone are the things that can be correctly or incorrectly spelled; it should enable us to understand why it is words and not other things that *have* spellings.

I confess myself unable to provide an explicit, Chisholm-style definition of '*x* is an abstract object'—although I am inclined to think that it is indeed true that a thing is abstract if and only if it is incapable of entering into causal relations (if and only if it can be neither an agent nor a patient). Nevertheless, the distinction between abstract and concrete is one that we *have*. If we present to a large and diverse contingent of philosophers a list of names and general terms (like the lists presented above), and if we ask these philosophers to divide the list into those terms that (if they designate anything) designate abstract objects and those terms

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was able not to create anything. It would seem to follow that there are possible worlds in which he is the only concrete object. It seems at least plausible to suppose that he enters into no causal relations in those worlds.

that (if they designate anything) designate concrete objects, we shall observe a very strong convergence of judgment. And this convergence will be independent of the ontological convictions of these philosophers. Those who affirm the existence of abstract objects will say that propositions and numbers are abstract objects, and those who deny the existence of abstract objects (but who regard "abstract object" as a meaningful description) will say that if there *were* propositions and numbers they *would* be abstract objects. And, of course, everyone who believes that 'concrete object' meaningfully applies to anything believes that if there were unicorns or elves they would be concrete objects.

Let us, for the moment, back away from the question how to distinguish abstract from concrete objects, and ask why some people deny that there are abstract objects, and why others believe that there are abstract objects. (Most philosophers agree that there are concrete objects—even if they believe that they are "bundles of universals."[21]) Perhaps the arguments that philosophers have given against and for the existence of abstract objects will provide some clue as to the nature of the distinction between abstract and concrete objects. And, of course, the question "Are there abstract objects?" is an important question in its own right.

**3.** In their book *A Subject without an Object: Strategies for the Nominalistic Interpretation of Mathematics*[22], John Burgess and Gideon Rosen suggest that—in fact they argue at some length for the conclusion that—the motivation for undertaking nominalistic reconstructions of mathematics has not been clearly and persuasively formulated.[23] This seems to me to be wrong. At any rate, it seems to me that it is not hard to formulate the motivation (or a sufficient motivation) for this project clearly and persuasively. Suppose one could show this: it would be better not to believe in abstract objects if one could get away with it. Or this, if it is not the same: it would be philosophically desirable to accept only philosophical positions that do not require their adherents to affirm the existence of abstract objects. I will take it that it is evident why someone who accepted this conclusion (or either of them if they are different) would have a strong motivation for wishing that a nominalistic reconstruction or interpretation of mathematics was available.

In this section, I will present an argument for the conclusion that not believing in abstract objects would be a Good Thing, for the conclusion, that is, that one should not believe in abstract objects unless one feels rationally compelled to by some weighty consideration or argument. If we call the thesis that there are abstract objects *platonism*, my conclusion is that a philosopher should wish not to be a platonist if it's rationally possible for the informed philosopher not to be a platonist. And I'll take it for granted that if one takes this attitude toward platonism, one should take the same attitude toward any theory from which platonism is deducible. Thus, if a theory T entails platonism, that is a good reason not to accept that theory. (This bald statement requires qualification, however. If T is a very attractive theory, the fact that T entails platonism might be a good reason for accepting platonism. Its existence and the fact that it entailed platonism might in fact be just the "weighty reason" for accepting platonism that showed that one should, after all, be a platonist. My point is really a truism: if Theory One entails Theory Two, and is known to do so, then the question whether either of the theories should be accepted or rejected cannot be considered in isolation from the question whether the other should be accepted or rejected.) If, moreover, a theory might, for all anyone knows at present, entail platonism, that is a good reason to try to find out whether it in fact entails platonism—just as, if a theory might, for all anyone knows, entail a contradiction, that is a good reason to try to find out whether it in fact entails a contradiction.

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[21] But see L. A. Paul, "Logical Parts".

[22] The main topic of the book is well conveyed by its subtitle.

[23] See part 1A, "Introduction," *passim.*

It would, I maintain, be better not to be a platonist—*prima facie* better, better if we could get away with it. The reason is not profound. I suppose one could classify it as an 'Occam's razor' sort of reason, though I will not make any use of this term.

Think of matters this way. The platonist must think of objects, of what there is, as falling into two exclusive and exhaustive categories, the abstract and the concrete. If *x* falls into one of these categories and *y* into the other, then no two things could be more different than *x* and *y*. According to orthodox Christian theology, no two concrete things could differ more than God and an inanimate object. But (assuming for the sake of the illustration that all three things exist) the differences between God and this pen pale into insignificance when they are compared with the differences between this pen and the number four; indeed, the number seems no more like the pen than like God. The difference between *any* abstract object and *any* concrete object would seem to be the maximum difference any two objects could display. The difference between a topological space and the color the Taj Mahal shares with the Washington Monument is no doubt very great, but each is far more like the other than either is like this pen. (Again, of course, we are assuming for the sake of the illustration that all three things exist.)

Now it seems very puzzling that objects should fall into two exclusive and radically different categories. Rather than suppose that this is so, it would be much more appealing to suppose that at least one of these categories was empty—or that the words we have used to describe one or both of the two categories were meaningless. And we cannot suppose that the category that contains the pen, the category of concrete objects, is empty, for that is the category into which *we* fall, and, as Descartes has pointed out, we know *we* exist. (I set aside Quine's amusing reduction of supposedly concrete things to pure sets; we can't discuss everything. I shall mention this reduction again, but only as an example to illustrate a point.) It seems, moreover, that we know a lot more about concrete things than we know about abstract things. We understand them better. Maybe not *well*, but better than we understand abstract things. At least we understand *some* of them better: simple paradigms of concrete things. We do not understand even the simplest, the paradigmatic, abstract objects very well at all. You say there is such a thing as the number four? All right, tell me what properties it has. Well, it has logical properties like self-identity and having, for no property, both that property and its complement. And it has arithmetical properties like being even and being the successor of three and numbering the Stuart kings of England. But what others? It is, no doubt, non-spatial, and perhaps non-temporal. It is perhaps necessarily existent. At about this point we trail off into uncertainty. Consider, by way of contrast, this pen. It has the same logical properties as the number. It does not have arithmetical properties, but it has functional properties, like being an instrument for making marks on surfaces, and perhaps the functional properties of an artifact are analogous to the arithmetical properties of a number. It has "metaphysical" properties, properties as abstract and general as those we ascribed to the number: it occupies space, it endures through or is extended in time, its existence is contingent. When we have said these things, these things that correspond to what we were able to say about the number, however, we do not trail off into uncertainty. There is *lots* more we can say. We could write a book about the pen, albeit not a very interesting one. We could discuss its color, its mass, its spatial and mereological structure, the chemical composition of its various parts and of the ink it contains, the devices by which ink is drawn from an internal reservoir to the rolling ball that distributes the ink on paper, and so—for practical purposes, at least—*ad infinitum*. If it is not altogether clear what I mean by saying that we have a pretty good understanding of a certain *object* ('object' as opposed to 'concept'), *this* is what I mean: this ability to go on saying true things about the intrinsic features of the object till we drop. And if I say we do not have a very good understanding of the number four, I mean simply that if we try to describe its intrinsic features, we soon trail off in puzzlement. We may trail off in puzzlement at *some* point in our disquisition about the pen: when we try to specify the conditions under which it endures through time or the counterfactual situations in which it would have existed, for example. (If Sartre is right, certain speculations about the pen can lead not only to puzzlement but to nausea.) But we can go on about the pen for an awfully long time before we come to such a point. If this difference in our abilities to describe the pen and the number cannot be ascribed to "a better understanding" of the pen than of the number, what can it be ascribed to? After all, it can hardly be that the number has fewer properties than the pen. If the number and the pen both exist—if the phrases 'the number four' and 'this pen' both really denote something—then these two objects both have the following feature: each is an object *x* such that, for every property, *x* has either that property or its complement. It must therefore be that we know a lot less about the properties of the number than we do about the properties of the pen. And that seems to me to imply that, when we talk about the pen, we have a pretty good idea of the nature of the thing we are talking about, and when we talk about the number, we have at best a radically incomplete idea of the nature of the thing we are talking about.

Platonists, therefore, must say that reality, what there is, is divided into two parts: one part *we* belong to, and everything in this part is more like us than is anything in the other part. The inhabitants of the other part are radically unlike us, much more unlike us than is anything in "our" part, and we can't really say much about what the things in the other part are like. It seems to me to be evident that it would be better not to believe in the other part of reality, the other category of things, if we could manage it. But we can't manage it. In the next section, I shall try to explain why we can't get along without *one* kind of abstract object: properties.

**4.** What reasons are there for believing in the existence of properties (qualities, attributes, features, characteristics . . . )? There are *apparently* such things as properties. There is, for example, apparently such a thing as humanity. The members of the class of human beings, as the idiom has it, "have something in common," and what could this "something" be but the property "humanity"? It could certainly not be anything physical, for—conjoined twins excepted—no two human beings have any physical thing in common. And, of course, what goes for the class of human beings goes for the class of birds, the class of white things, and the class of intermediate vector bosons: the members of each of these classes have something in common with one another, and what the members of a class have in common is a property—or so it appears. Let us call the philosophers who deny the existence of properties nominalists and the metaphysicians who affirm the existence of properties platonists. (Each of these terms could be objected to on historical grounds. But let us pass over these objections.)

How can the dispute between the nominalists and the platonists be resolved? The considerations on "ontological commitment" that we presented in Section 4 of Chapter I suggest a way to approach this question. Nominalists and platonists have different beliefs about what there is. Let us therefore ask this: How should one decide what to believe about what there is? If one is of Quine's school, one will say (at any rate *I* say this, daring as I do to speak for "Quine's school") that the problem of deciding what to believe about what there is is a very straightforward special case of the problem of deciding what to believe. (The problem of deciding what to believe is, to be sure, no trivial problem, but it is a problem everyone is going to have somehow to come to terms with.) If we want to decide whether to believe that there are properties—so we of Quine's school say—, we should examine the beliefs we already have, the theses we have already, for whatever reason, decided to believe, and see whether they "commit us" (as we "neo-Quineans" say) to the existence of properties. But what does this mean? Let us consider an example. Suppose we find the following propositions among our beliefs:

1. Every spider shares certain anatomical characteristics with every insect
2. There are spiders and there are insects.

Proposition (1) can be expressed in the quantifier-variable idiom (the "canonical notation of quantification") in this way:[24]

$1'$. Everything$_x$ is such that everything$_y$ is such that (it$_x$ is a spider & it$_y$ is an insect. → something$_z$ is such that (it$_z$ is an anatomical characteristic & it$_x$ has it$_z$ & it$_y$ has it$_z$)).

That is to say: if one speaker makes an assertion by uttering, "Every spider shares certain anatomical characteristics with every insect" and another makes an assertion by uttering ($1'$), those two speakers have *asserted the same thing*; they have *said the same thing in different words.*

Proposition (2), moreover, can be expressed in the quantifier-variable idiom in *this* way:

$2'$. Something is such that (it is a spider) & something is such that it is an insect.

And the proposition

Something is such that it is an anatomical characteristic

is a straightforward logical consequence of propositions ($1'$) and ($2'$), a *formal* consequence of ($1'$) and ($2'$), a proposition derivable from ($1'$) and ($2'$) by (as my teacher Henry Kyburg liked to say) quantifier dropping and horseshoe pushing. And if Alice, Bertram, Charlotte, and Derek say (respectively), "Something is such that it is an anatomical characteristic," "Something is an anatomical characteristic," "There are anatomical characteristics," and "Anatomical characteristics exist," those four speakers have said the same thing in different words.

Let us (to save space) stipulate that the sentence 'Spiders and insects share certain anatomical characteristics' is equivalent to the conjunction of (1) and (2). If the proposition that spiders and insects share certain anatomical characteristics logically implies the proposition that anatomical characteristics exist, what, exactly, is it that this proposition logically implies the existence of? What *are* anatomical characteristics? I would suggest that there is nothing for an anatomical characteristic (such as "having an exoskeleton") to be but a property: 'property', 'quality', 'characteristic', 'attribute', and 'feature' are all more or less synonyms. Therefore, if the proposition that spiders and insects share certain anatomical characteristics logically implies the existence of anatomical characteristics, it logically implies the existence of properties.

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[24] As we saw in Chapter I, the canonical notation of quantification does not essentially involve the symbols '∀' and '∃'. Natural-language phrases like 'everything is such that' and 'something is such that' will do as well, for the symbols are merely shorthand ways of writing such phrases. And the canonical notation of quantification does not essentially involve variables—'*x*', '*y*', and so on. For variables are nothing more than pronouns, or indices of pronouns: "variables" are simply indices that make the antecedents of occurrences of third-person-singular pronouns clear.

A moment ago I said,

> If we want to decide whether to believe that there are properties, we should examine the beliefs we already have, the theses we have already, for whatever reason, decided to believe, and see whether they commit us to the existence of properties.

And I promised to explain by example what it means to say that "the beliefs we already have commit us to the existence of properties." The example has now been given, and the answer it illustrates is this: The beliefs we already have logically imply the existence of properties. The example incorporated an argument for the conclusion that a certain "belief we already have" (to wit, that spiders and insects share certain anatomical characteristics) logically implied the existence of properties. But this argument was, of course, a philosophical argument, and, like most philosophical arguments, it is not what David Lewis liked to call a knock-down argument. It will, I am sure, fail to convert any significant proportion of nominalists to platonism. But why not? How might a nominalist respond to it?

Suppose we present the argument to Norma the Nominalist (who believes, as most people do, that spiders and insects share certain anatomical characteristics). If we assume that Norma is not a "Gellnerite," if we assume that she is unwilling simply to have inconsistent beliefs, there would seem to be four possible ways for her to respond to it:

(a) She might become a platonist.
(b) She might abandon her allegiance to the thesis that spiders and insects share certain anatomical characteristics
(c) She might attempt to show that, despite appearances, it does not follow from this thesis that properties exist.
(d) She might admit that her beliefs (her nominalism and her belief that spiders and insects share certain anatomical characteristics) are *apparently* inconsistent, insist that the inconsistency is only apparent, and confess that, although she is confident that there is some fault in our alleged demonstration that her belief about spiders and insects commits her to the existence of properties, she is at present unable to discover it.

Possibility (b) is not really very attractive. It is unattractive for at least two reasons. First, it seems to be a simple fact of biology that spiders and insects share certain anatomical characteristics. Secondly, there are many, many "simple facts" that could have been used as the premise of an essentially identical argument for the conclusion that there are properties. (For example: Elements in the same column in the Periodic Table tend to have many of the same chemical properties; Some of the most important characteristics of the 19th-century novel are rarely present in the 20th-century novel.) Possibility (d) is always an option, but no philosopher is likely to embrace it except as a last resort.[25] What Norma is most likely to do is to try to avail herself of Possibility (c). She will probably try to show that her belief about spiders and insects does not in fact commit her to the existence of properties. And her attempt to do this will consist in a search for a *paraphrase* of 'Spiders and insects share certain anatomical characteristics'—that is, she will try to find a sentence that (i) she could use in place of 'Spiders and insects share certain anatomical characteristics' and (ii) does not even *seem* to have 'Anatomical characteristics exist' as one of its logical consequences. If she can do this, she will be in a position to contend that the apparent entailment of the existence of anatomical characteristics by the proposition that spiders and insects share certain anatomical characteristics is only apparent.

Is it possible to find such a paraphrase? (And to find paraphrases of all the other apparently true statements that seem to commit those who make them to the reality of properties?) Well, yes and no. 'Yes' because it is certainly possible to find paraphrases of the anatomical characteristics sentence that involve quantification over some other sort of abstract object than anatomical characteristics—that is, other than properties. One might, for example, eliminate (as the jargon has it) the quantification over anatomical characteristics on display in the spider-insect sentence in favor of quantification over, say, anatomical *concepts*. No doubt any work that could be done by the anatomical characteristic "having an exoskeleton" could be done by the anatomical concept "thing with an exoskeleton." Neither of the two statements

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[25] Michael Rea has pointed out to me that Norma might have, or believe she has, a compelling argument for the thesis that propositions like those expressed by the spider-insect sentence and nominalism are consistent despite being unable to resolve the apparent contradiction between them. And in that case, one would not say that she would embrace Possibility (d) only as a last resort. But I have never seen such an argument and have no idea what it would be like. (I hope it would not employ the same strategy as the following argument, which I *have* seen: We have free will; determinism is true; *hence*, Free will is compatible with determinism.) Honesty compels me to add that if a philosopher does embrace Possibility (d), I am not in a position to complain, for I have done essentially the same thing myself: I accept the thesis that there are undetermined free actions, despite the fact that "undetermined free action" is, by my own admission, an apparent self-contradiction, and, by my own admission, I know of no way to resolve the apparent contradiction.

> Everything$_x$ is such that everything$_y$ is such that (it$_x$ is a spider & it$_y$ is an insect. → something$_z$ is such that (it$_z$ is an anatomical characteristic & it$_x$ has it$_z$ & it$_y$ has it$_z$)).
>
> Everything$_x$ is such that everything$_y$ is such that (it$_x$ is a spider & it$_y$ is an insect. → something$_z$ is such that (it$_z$ is an anatomical concept & it$_x$ falls under it$_z$ & it$_y$ falls under it$_z$)).

would seem to enjoy any advantage over the other as a vehicle for expressing what we know about the anatomical similarities and differences of the members of the phylum *Arthropoda*. Or, if one of them does, it will be some relatively minor, technical advantage. It is certain that a nominalist will be no more receptive to an ontology that contains concepts (understood in a platonic or Fregean sense, and not in some psychological sense) than to an ontology that contains properties. When I say it is not possible to get along without asserting the existence of properties, therefore, what I mean is that it is not possible to get along without asserting the existence of either properties or something that a nominalist is not going to like any better than properties.

Now the distinction between a "relatively minor, technical advantage" and a really important advantage, an advantage that can be appealed to as relevant in disputes about fundamental ontology, is not as clear as it might be. Here is an example that illustrates this point. Some philosophers, most notably Quine, would agree that we cannot eliminate quantification over abstract objects, but deny that examples like the above, or any other consideration, should convince us that there are *properties*. Quine would insist that the most that any such argument can establish is that we must allow the existence of *sets*. Quine concedes that in affirming the existence of sets he is affirming the existence of abstract objects. The set of all spiders, after all, is neither a spider nor a sum of spiders nor any other sort of concrete object. It is true that if the only use we made of the language of set theory was exemplified by phrases, like 'the set of all spiders' and 'the set of all intermediate vector bosons', we could regard our use of such phrases as being merely a device for referring collectively to all spiders, to all intermediate vector bosons . . . and so on. But that is not the only use we make of such language, for, if we are going to say the things we want to say, and if we affirm the existence of no abstract objects but sets, we must quantify over sets and we must refer to (and quantify over) sets that have sets as members. (If we wish to express the facts of evolutionary biology, we must say things like 'Any spider and any insect have a common ancestor', and those who believe in no abstract objects but sets cannot say that without quantifying over sets—at least not unless they are willing to take 'ancestor of' as undefined; if their only undefined term pertaining to ancestry is 'parent of', they must affirm generalizations about individually unspecified sets to express the idea "ancestor of." Or we may wish to make use of the idea of *linear* *order*—we may, for example, wish to calculate the probability of drawing a face card, an ace, and a heart *in that order*; and those who believe in no abstract objects but sets must refer to sets that have sets as members to explain the idea of things-arranged-in-some-linear-order.) Sets, then, are abstract objects, but, Quine says, sets are not properties. And this statement points to a far more important fact than the statement that concepts are not properties. Sets, Quine tells us, are well behaved in a way in which concepts and properties are not. Or, availing himself of the method of "semantic ascent" he might wish rather to say this: those who contend that general terms like 'concept' and 'property' have non-empty extensions face intractable problems of individuation, problems that do not face those who, in admitting abstract objects into their ontology, content themselves with saying that 'set' has a non-empty extension.

I will make one remark, or one connected series of remarks, about Quine's thesis (the thesis, that is, that, given that one has been "forced" to admit abstract objects of some sort into one's ontology, one will do well to admit no abstract objects but sets). I doubt whether a kind of object's having an extensional principle of individuation has the fundamental ontological significance that Quine ascribes to it. To begin with, I'm not entirely sure that the idea of a certain sort of entity's having an extensional principle of individuation makes sense. I certainly don't see how to write out a formal *definiens* for 'the so-and-so's have an extensional principle of individuation'.[26] And I am far from confident that if I did understand the concept "sort of thing that has an extensional principle of individuation,"

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[26] We say that sets have an extensional principle of individuation because sets are identical if and only if they have the same members. We say that properties do not have an extensional principle of individuation because it is not the case that properties are identical if and only if they have the same "exemplifiers." But these two statements do not tell us what it is we are saying *in general* about the things of some given kind when we say that those things do or do not "have an extensional principle of individuation."

Perhaps the idea could be expressed in the following way.

Sets are the paradigm or central case of things that have an extensional principle of individuation. Let a '*member*'*-analogue* for a count-noun *x* be any count-noun that stands to *x* as 'member' stands to 'set'. (Thus 'exemplifier' is a 'member'-analogue for 'property'.) Our proposed definition of 'have an extensional principle of individuation' takes the form of a schema:

> *K*s have an extensional principle of individuation if and only if (*K*s are identical if and only if they have the same *k*s).

*Instances* of this schema are obtained by replacing '*K*s' with a plural count-noun and replacing '*k*s' with a 'member'-analogue of the noun that replaces '*K*s'. One instance of this schema is

> Properties have an extensional principle of individuation if and only if (properties are identical if and only if they have the same exemplifiers).

Another instance might be obtained by replacing 'Properties' in this statement by 'Relations'—with the understanding that the "exemplifiers" of an *n*-adic relation are *n*-term sequences. And this might be another:

> Propositions have an extensional principle of individuation if and only if (propositions are identical if and only if they have the same truth-values).

This is the best I can do. And I regard this "best" as very far from satisfactory. For one thing, it "privileges" sets: things of a given sort have an extensional principle of individuation just in the case

I should regard falling under this concept as a mark of ontological good behavior. I don't see why the concept "abstract object of a sort that has an extensional principle of individuation" should be identified with the concept "abstract object of a sort that is well behaved." In any case, whatever may be the case as regards the individuation of properties, they seem to be perfectly well behaved (Russell's paradox aside; but sets enjoy no advantage over properties in respect of Russell's paradox).

It might be objected—Quine no doubt would object—that properties lack not only an extensional principle of individuation (whatever that is), but lack a principle of individuation of any sort. Properties must therefore (the objection continues) to be ruled *entia non grata* by anyone who accepts the principle "No entity without identity." I reply, first, that it is certainly possible to supply principles of individuation for properties, although any such principle will be controversial. (For example: $x$ is the same property as $y$ just in the case that $x$ and $y$ are co-extensive in all possible worlds; $x$ is the same property as $y$ just in the case that $x$ and $y$ are co-extensive in all possible worlds *and*, necessarily, whoever considers $x$ considers $y$ and whoever considers $y$ considers $x$.) Secondly, the principle "No entity without identity" is ambiguous. It might mean "One should not quantify over entities of a given sort unless one is able explicitly to supply a principle of individuation for those entities." Or it might mean, "For every $x$ and for every $y$, $x$ is identical with $y$ or it is not the case that $x$ is identical with $y$." I see no reason to accept the first of these principles. The second is certainly unobjectionable (it is a theorem of quantifier logic with identity), but there is no reason to suppose that those who quantify over entities of a sort for which they have not endorsed an explicit principle of individuation are committed to its denial. One might wonder whether the widespread popularity of the first principle isn't due to the fact that the ambiguity of the slogan "No entity without identity" has led many philosophers to conflate the two principles. It seems to me, in any case, that the falsity of the first principle is adequately demonstrated by the fact that unrestricted quantification is possible, the fact that one can quantify over objects-in-general (as "Everything has a consistent set of properties" or "Something is self-identical"). What is the principle of individuation for objects that have a consistent set of properties? What is the principle of individuation for self-identical things? What is the principle of individuation for "objects-in-general"? What is the principle of individuation for objects full stop?

Let us return to the topic of paraphrase. Is it possible to provide sentences like 'Spiders and insects share certain anatomical characteristics' with *nominalistically acceptable* paraphrases? My position is that it is not. I cannot hope to present an

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that they are, well, relevantly like sets. And, secondly, the content of "relevantly like" is not well described: the definition of a " 'member"-analogue' of a count-noun can most charitably be described as a gesture in the direction of a definition.

adequate defense of this position, for an adequate defense of this position would have to take the form of an examination of all possible candidates for nominalistically acceptable paraphrases of such sentences, and I cannot hope to do that. The question of nominalistically acceptable paraphrase will be answered, if at all, only as the outcome of an extended dialectical process, a process involving many philosophers and many years and many gallons of ink. I can do no more than look at one strand of reasoning in this complicated dialectical tapestry. My statement, "We can't get away with it," must be regarded as a promissory note. But here is the first installment of my repayment of the debt I have incurred by issuing this note.

Suppose a nominalist were to say this: "It's easy to find a nominalistically acceptable paraphrase of 'Spiders and insects share certain anatomical characteristics'. For example: 'Spiders and insects are alike in some anatomically relevant ways' or 'Spiders and insects are in some respects anatomically similar'." A platonist is likely to respond as follows (at least this is what *I'd* say):

> But these proposed paraphrases seem to be quantifications over "ways things can be alike" or "respects in which things can be similar." If we translate them into the canonical language of quantification, we have sentences something like these
>
> > Something is a way in which things can be alike and it is relevant to anatomy and spiders and insects are alike in it
> >
> > Something is a respect in which things can be similar and it is an anatomical respect and spiders and insects are similar in it.
>
> These paraphrases, therefore, can hardly be called nominalistically acceptable. If there are such objects as ways in which things can be alike or respects in which things can be similar, they must certainly be *abstract* objects.

What might the nominalist say in reply? The most plausible reply open to the nominalist seems to me to be along the following lines.

> My platonist critic is certainly a very literal-minded fellow. I didn't mean the 'some' in the open sentence '$x$ and $y$ are alike in some anatomically relevant ways' to be taken as a *quantifier*: I didn't mean this sentence to be read '$\exists z$ ($z$ is a way in which things can be alike and $z$ is relevant to anatomy and $x$ and $y$ are alike in $z$)'. That's absurd. One might as well read 'There's more than one way to skin a cat' as '$\exists x \exists y$ ($x$ is a way of skinning a cat and $y$ is a way of skinning a cat and $x \neq y$)'. I meant '$x$ and $y$ are alike in some anatomically relevant ways' to have no internal logical structure, or none beyond "containing two free variables." It's just a form of words we learn to use by comparing various pairs of objects in the ordinary business of life.

And here is the rejoinder to this reply:

> If you take that line you confront problems it would be better not to have to confront. Consider the sentence '$x$ and $y$ are alike in some *physiologically* relevant ways'. Surely there is some logical or structural or syntactical relation between this sentence and '$x$ and y are alike in some anatomically relevant ways'? One way to explain the relation between these two sentences is to read the former as '$\exists z$ ($z$ is a way in which things can be alike and $z$ is relevant to physiology and $x$ and $y$ are alike in $z$)' and the latter as '$\exists z$ ($z$ is a way in which things can be alike and $z$ is relevant to anatomy and $x$ and $y$ are alike in $z$)'. How would *you* explain it? Or how would you explain the relation between the sentences '$x$ and y are alike in *some* anatomically relevant ways' (which you say has no logical structure) and '$x$ and y are alike in *all* anatomically relevant ways'? If neither of these sentences has a logical structure, how do you account for the obvious validity of the argument
>
>> Two mature and anatomically normal female spiders of the same species are alike in all anatomically relevant ways
>>
>> *Hence*, If an insect and a given anatomically normal mature female spider are alike in some anatomically relevant ways, that insect and any anatomically normal mature female spider of the same species are alike in some anatomically relevant ways?
>
> If the premise and conclusion of this argument are read as having the logical structure their syntax suggests, the validity of this argument is easily demonstrable in textbook quantifier logic. If one insists that they have no logical structure, one will find it difficult to account for the validity of this argument. That is one of those problems I alluded to, one of those problems it would be better not to have to confront. (One of thousands of such problems.)

I suggest that we can learn a lesson[27] from this little exchange between an imaginary nominalist and an imaginary platonist: that one should accept the following condition of adequacy on philosophical paraphrases

> Paraphrases must not be such as to leave us without an account of the logical relations between predicates that are obviously logically related. Essentially the same constraint on paraphrase can be put in these words: A paraphrase must not leave us without an account of the validity of any obviously valid argument.

Accepting this constraint has, I believe, a significant consequence. This consequence requires a rather lengthy statement.

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[27] A lesson that was taught in another way in Section 4 of Chapter I.

> Apparent quantification over properties pervades our discourse. In the end, one can avoid quantifying over properties only by quantifying over other sorts of abstract object—"ways in which a thing can be like a thing," for example. But most philosophers, if forced to choose between quantifying over properties and quantifying over these other objects would probably prefer to quantify over properties. The reason for this may be illustrated by the case of "ways in which a thing can be like a thing." If there really are such objects as ways in which a thing can be like a thing, they seem to be at once intimately connected with properties and, so to speak, more *specialized* than properties. What, after all, would a particular "way in which a thing can be like a thing" be but the sharing of a certain property? (To say this is consistent with saying that not just any property is such that sharing it is a way in which a thing can be like a thing; sharing "being green" can plausibly be described as a way in which a thing can be like a thing, but it is much less plausible to describe sharing "being either green or not round"—if there is such a property—as a way in which a thing can be like a thing.) And if this is so, surely, the best course is to accept the existence of properties and to "analyze away" all apparent quantifications over "ways in which a thing can be like a thing" in terms of quantifications over properties.

It is the content of this lengthy statement that I have abbreviated as "We can't get away with it."

This argument I have given has some obvious points of contact with the so-called Quine-Putnam indispensability argument for mathematical realism.[28] But there are important differences between the two arguments—I mean besides the obvious fact that my argument is an argument for the existence of properties and not an argument for the existence of specifically mathematical objects. It should be noted that my argument is not that we should believe that properties exist because their existence is an indispensable postulate of science. Nor have I contended that quantification over properties is indispensable to science and that this indispensability is *evidence* for the existence of properties. I have not maintained that, because of the scientific indispensability of properties, any adequate account of the success of science must affirm the existence of properties. For one thing, my argument has nothing in particular to do with science. Science does indeed provide us with plenty of examples of sentences that must in some sense, on some analysis, express truths and also, on the face of it, imply the existence of properties. For example: 'Many of the important properties of water are due to hydrogen bonding'. But our everyday, pre-scientific discourse contains a vast number of such sentences, and these will serve my purposes as well as any sentences provided by the sciences. If our "anatomical characteristics" sentence is insufficiently non-scientific to support this thesis, there are lots of others ('The royal armorer has succeeded in producing a kind of steel that has some of but not all the desirable characteristics of Damascus steel'). My argument could have been presented in, say, the 13th century, and the advent of modern science has done nothing to make it more cogent.[29]

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[28] The *locus classicus* of the argument is Hilary Putnam, *Philosophy of Logic*. See particularly section 8, "Indispensability Arguments." (Putnam later repudiated the argument.)

More importantly, I have not supposed that the fact (supposing it to be a fact) that quantification over properties is an indispensable component of our discourse is any sort of *evidence* for the existence of properties. That's as may be; I neither affirm that thesis nor deny it. It is simply not a premise of my argument, which is not an epistemological argument. (Nor is my argument a "transcendental" argument or an inference to the best explanation; I have not contended that the success of science cannot be accounted for on nominalistic premises. Again, that's as may be.) If I have appealed to any general methodological principle, it is only this: If one doesn't believe that things of a certain sort exist, one shouldn't say anything that demonstrably implies that things of that sort do exist. (Or, at any rate, one may say such things only if one is in a position to contend, and plausibly, that saying these things is a mere manner of speaking—that, however convenient it may be, it could, in principle, be dispensed with.) This methodological rule does not, I think, deserve to be controversial. We would all agree, would we not, that if *p* demonstrably implies the existence of God, then atheists who propose to remain atheists shouldn't affirm *p*? Or not, at any rate, unless they can show us how they could in principle dispense with affirming *p* in favor of affirming only propositions without theological implications?

I suppose I ought to add—the point needs to be made somewhere—that if one *could* show how to eliminate quantification over properties in a nominalistically acceptable way, that achievement would *by itself* have no ontological implications. After all, Quine has shown how to replace quantification over physical bodies with quantification over pure sets, and Church has shown how to replace quantification over women with quantification over their fathers. But Quine's elimination of quantification over physical bodies of ontological interest only if "not containing physical bodies" is a desirable feature for an ontology to have, and Church's "ontological misogyny"[30] is of ontological interest only if "not containing women" is a desirable feature for an ontology to have.[31] I expect, however, that I'm saying nothing controversial if I say neither is a desirable feature for an ontology to have. If what I said in the third section of this chapter is right, however, "containing no abstract objects" *is* a desirable feature for an ontology to have.

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[29] Modern quantifier logic is not essential to the argument. An appeal to the fact that certain inferences are formally valid according to modern quantifier logic facilitates the argument, but one does not need modern quantifier logic to see that 'There are spiders and there are insects; Every spider shares certain anatomical characteristics with every insect; *Hence*, There is at least one anatomical characteristic' is a valid inference. In any case, something like modern quantifier logic *might* have been known in the 13th century. Some 12th-century Frege might have invented such a logic; if this had happened (I am fairly confident), that logic would soon enough (within a century, say) have become the standard logic of generality.

[30] In 1958, Alonzo Church delivered a lecture at Harvard, the final seven paragraphs of which have lately been making the e-mail rounds under the title (not Church's), "Ontological Misogyny." In these paragraphs, Church wickedly compares Goodman's attitude toward abstract objects to a misogynist's

**5.** If we affirm the existence of properties, we ought to have a theory of properties. By a "theory of properties," I mean some sort of specification of, well, the *properties* of properties. If one succeeds in showing that we cannot dispense with quantification over properties, one's achievement does not tell us much about the intrinsic features of these things. When I was presenting what I took to be the *prima facie* case for nominalism, I said that we didn't know much about the properties of properties. I am now making the point that the sort of argument for the existence of properties I have offered does not tell us much about the nature of properties. The whole of our discourse about things, on the face of it, defines what may be called "the property role," and our argument can be looked on as an attempt to show that something must play this role. (The property role could, in principle, be specified by the Ramsey-style methods that Lewis sets out in "How to Define Theoretical Terms."[32]) But it tells us nothing about the intrinsic properties of the things that play this role that enable them to play this role. In "Holes,"[33] Bargle argues that there must be holes, and his argument is in many ways like our argument for the existence of properties. That is, he uses some ordinary discourse about cheese and crackers to define the "hole role," and he attempts to show that one can't avoid the conclusion that something plays that role. Argle, after an initial attempt to evade Bargle's argument, accepts it: there *are* things that play the hole role—*but* they are material things. (When holes are holes in a piece of cheese, they are connected, singly perforate bits of cheese that stand in the right sort of contrast to their non-cheesy surroundings.) His arguments can be described as defenses of the thesis that things with the intrinsic properties he

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attitude toward women. ("Now a misogynist is a man who finds women difficult to understand, and who in fact considers them objectionable incongruities in an otherwise matter-of-fact and hard-headed world. Suppose then that in analogy with nominalism the misogynist is led by his dislike and distrust of women to omit them from his ontology.") Church then shows the misogynist how to eliminate women from his ontology. (In case you are curious: We avail ourselves of the fact that every woman has a unique father. Let us say that men who have female offspring have two modes of presence in the world, primary and secondary. Primary presence is what is usually called presence. In cases in which we should normally say that a woman was present at a certain place, the misogynist who avails himself of Church's proposal will say that a certain man—the man who would ordinarily be described as the woman's father—exhibits secondary presence at that place....) "Ontological Misogyny" came to me by the following route: Tyler Burge, Michael Zeleny (Department of Mathematics, UCLA), James Cargile.

[31] Perhaps I ought to have said "would be of *primary* ontological interest." The devices of Quine and Church are of ontological interest in the sense that they illustrate an important point about the use of paraphrase in ontology.

[32] The property role could, in principle, be specified by the Ramsey-style methods that Lewis sets out in "How to Define Theoretical Terms."

[33] "Holes" is an excellent introduction to the approach to ontology recommended in this book.

assigns to holes are capable of playing the role that Bargle's argument shows is played by something-we-know-not-what.

We are not in a position to do anything with respect to properties that is comparable to what Argle has done with respect to holes—for, as I have observed, we cannot say anything much about the intrinsic properties of properties. It is, of course, unlikely that if we could say anything more than the little we can about the intrinsic properties of properties, we should find that the things whose properties we had specified were acceptable to the nominalist. It would seem in fact that even the little we can say about the properties of properties are sufficient to make them unacceptable to nominalists. (If this were not so, the whole nominalist-platonist debate would have to be re-thought.) However this may be, the plain fact is: we platonists *can't* describe those somethings-we-know-not-what we say play the property role in anything like the depth in which Argle describes the things that (*he* says) play the hole role. Argle can describe the things he calls "holes" as well as he can describe anything; we platonists can describe any concrete object in incomparably greater depth than we can any property.

I wish it weren't so, but it is. Or so *I* say. Some will dissent from my thesis that properties are mysterious. David Lewis is a salient example. According to Lewis,[34] the property role is played by certain *sets*, and the answers to questions about the properties of those sets (or those of them that we can refer to at all) are no more difficult to obtain than the answers to questions about the properties of any set.[35] In my view, however, Lewis is not right about properties. In the next section, I will explain why I think this. (A qualification. I have said that, according to Lewis, certain sets are suitable to play the property role. In Lewis's view, however, it may be that our discourse defines at least two distinct roles that could equally well be described as "property roles."[36] It should be said of those sets, the sets that Lewis has pressed into service, that although they can play *one* of the property roles, they are unsuited for the other—if there indeed are two property roles.)

**6.** According to Lewis, the property "being a pig" is the set of all pigs, including those pigs that are inhabitants of other possible worlds than ours. But, in saying this, I involve myself in Lewis's notorious modal ontology.[37] Let us, for the moment, avoid the questions raised by Lewis's modal ontology and say that Lewis's theory is one member of a species of theory according to all of which the property "being a pig" is the set of all possible pigs. Members of this species differ in their accounts of what a possible pig is. (That is to say, they differ in their accounts of what a *possibile* or *possible object* is, for we are interested not only in the property "being a pig" but in properties generally. According to all theories of this kind, every property is a set of *possibilia* and every set of *possibilia* is a property.) Lewis's theory will be just the member of this species according to which possible objects are what Lewis says possible objects are, and will be like the other members of the species on all points not touching on the nature of possible objects. The other members of the species are Meinongian theories, or all of them I can think of are.

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[34] And no less difficult. Consider, for example, the difficult questions, 'What are the intrinsic properties of the set {Socrates}?'; 'Is *having Socrates as its sole member* an intrinsic or a relational property of that set?'

[35] *On the Plurality of Worlds*, chapter 1, part 1.5, pp. 50–69.

[36] See "New Work for a Theory of Universals."

[37] We shall discuss Lewis's modal ontology in Chapter IV.

What is a possible object? Examination of our use of the adjective "possible" shows that it has no fixed meaning. Its meaning rather depends on the word or phrase it modifies. (We shall discuss this point in greater detail in Chapter V.) A possible proposition is a proposition that is possibly true. A possible state of affairs is a state of affairs that possibly obtains. A possible property is a property that is possibly instantiated. What, then, is a possible pig? A pig can't be true or false, can't obtain or not obtain, can't be instantiated or uninstantiated. Like Pocahontas, the Parthenon, and the pulsar PSR J1748-2446ad, a pig just *is*. So—a possible pig is a pig that is possibly *what*? It may be that we sometimes use "possible pig" to mean, not something of the form "pig that is possibly F," but rather "thing that is possibly a pig"; if so, this is no clue to what "possible pig" and, more generally, "possible object" mean in theories according to which the property "being a pig" is the set of all possible pigs and every set of possible objects is a property. If any such theory is correct, every possible pig must be, without qualification, a pig—and not a merely counterfactual pig or a merely potential pig. And no one, in any context, would ever want to define "possible object" as "something that is possibly an object," for, although it is possible not to be a pig (in fact, I've seen it done), it is not possible not to be an object. "Possible object" must therefore, at least in statements of theories of properties like those we are considering, have a logical structure like that of "possible proposition" or "possible property." A definition of "possible object" must have the form "thing that is an object and is also possibly F." And of course, if the definition is to be of any interest, F must represent a characteristic that does not belong to objects as a necessary and automatic consequence of their being objects. What characteristic could satisfy this condition?

A Meinongian, or, rather, a neo-Meinongian like Terence Parsons,[38] has a simple answer to this question. Just as a possible proposition is a proposition that is possibly *true*, and a possible property is a property that is possibly *instantiated*, a possible object is an object that is possibly *existent*. (We must avoid confusion on the following point. Assuming that there is such a thing as the proposition that 2 + 2 = 5, it is a possible object and is not a possible proposition. Since all propositions are objects, it might be thought to follow that it was at once a possible object and not a possible object. But to infer that conclusion would be to commit the fallacy of ambiguity. All that follows from its being a possible object and its not being a possible proposition is that it is an object that is possibly *existent* and an object that is not possibly *true*—which is not even an apparent contradiction.) And, the neo-Meinongians maintain, objects are not necessarily and automatically existent. Although any object must *be*, there are objects that could fail to *exist*. In fact, most of the objects that are *do* fail to exist, and many objects that do exist might have been without existing. (Paleo-Meinongians would not agree that any object must be; they contend that many objects, so to speak, don't be.[39])

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[38] See Terence Parsons, *Nonexistent Objects*.

Let us turn to Lewis's version of the properties-as-sets-of-possible-objects theory. According to Lewis, a possible object is indeed simply an object. But some possible objects are, as he says, *actual* and some are *merely* possible. Merely possible objects are not objects that do not exist; that is, they are not objects of which we can correctly say "in the philosophy room"[40] that they do not exist. Outside the philosophy room, immersed in the ordinary business of life, we can say, and say truly, that flying pigs do not exist, despite the fact that we say truly in the philosophy room that some possible objects are flying pigs. When we say that there are no flying pigs, our use of the quantifier is like that of someone who looks in the fridge and says sadly, "There's no beer." When I say, in the philosophy room, "There are flying pigs, but they're one and all merely possible objects," I'm saying this: There are [an absolutely unrestricted quantifier; in the philosophy room, all contextual restrictions on quantification are forbidden] flying pigs, and they're spatio-temporally unrelated to you and me."

The problem with Lewis's theory, as I see it, is that there is no reason to think that there is anything spatio-temporal that is spatio-temporally unrelated to me, and, if there *is* anything in this category, I don't see why it should be described as a "merely possible" or a "non-actual" object. Suppose there *is* a pig that is spatio-temporally unrelated to me—or, less parochially, to us all. Why should one call it a "merely possible pig"—or a "non-actual pig"? Why are those good things to call it?[41] This is not the end of the matter, however. Even if a pig spatio-temporally unrelated to us *can't* properly be called a merely possible pig, it doesn't follow immediately that Lewis's theory of properties is wrong. If what Lewis calls the principle of plenitude is true—if, as Lewis maintains, there exists (unrestricted quantifier) a pig having, intuitively speaking, every set of properties consistent with its being a pig—, then there might be something to be said for identifying the set of all pigs (including those spatio-temporally unrelated to us) with the property

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[39] See the discussion of "Thesis 2" in Chapter I, and Sections 1 and 2 of Chapter II.

[40] I borrow this term from David Lewis. See his collected *Philosophical Papers* Vol I, p. *x*.

[41] This point will be developed in Chapter IV.

"being a pig." (If there exist pigs having every possible combination of characteristics, there must be pigs that are spatially or temporally unrelated to us: if every pig was spatially and temporally related to us, there wouldn't be room for all the pigs Lewis says there are—there wouldn't, at any rate, unless it were possible for pigs to overlap spatially.) But even if there are pigs spatio-temporally unrelated to us, there is, so far as I can see, no good reason to accept the principle of plenitude—even as it applies to pigs, much less in its full generality.

On the face of it, the set of pigs seems to represent far too sparse a selection of the possible combinations of characteristics a pig might have for one to be able plausibly to maintain that this set could play the role "the property of being a pig." According to both the neo-Meinongians and Lewis, the set of pigs has a membership much more diverse than most of us would have expected, a membership whose diversity is restricted only by the requirements of logical consistency (for Lewis) or is not restricted at all (for the neo-Meinongians). If I am right, both Lewis and the Meinongians have failed to provide us with any reason to accept this *prima facie* very uncompelling thesis.

7. There is only one real objection to Lewis's theory of properties: it isn't true. It is a model of what a good theory should be, insofar as theoretical virtue can be divorced from truth. In this, the final section of this chapter, I present a theory of properties that, or so *I* say, does have the virtue of truth. Alas, even if it has that virtue, it has few others. Its principal vice is that it is very nearly vacuous. It can be compared to the theory that taking opium is followed by sleep because opium possesses a dormitive virtue. That theory about the connection of opium and sleep, as Lewis has pointed out, is not *entirely* vacuous; it is inconsistent with various theses, such as the thesis that taking opium is followed by sleep because a demon casts anyone who takes opium into sleep.[42] The theory of properties I shall present, although it is pretty close to being vacuous, is inconsistent with various theses about properties, and some of these theses have been endorsed by well-known philosophers.

The theory I shall present could be looked on as a way of specifying the property role, a way independent of and a little more informative than specifying this role via the apparent quantifications over properties that are to be found in our discourse. This theory identifies the property role with the role "thing that can be said of something." This role is a special case of the role "thing that can be said." Some things that can be said are things that can be said *period*, things that can be said *full stop*. For example: that Chicago has a population of over two million is something that can be said; another thing that can be said is that no orchid has ever filed an income-tax return. But these things—'propositions' is the usual name for them—are not things that can be said *of* anything, not even of Chicago and orchids. One can, however, say *of* Chicago that it has a population of over two million, and one can also say this, this very same thing, of New York. And, of course, one can say it of Sydney and of South Bend. (It can be said only falsely of South Bend, of course, but lies and honest mistakes are possible.) I will assume that anything that can be said of anything can be said of anything else. Thus, if there are such things as topological spaces, one can say of any of them that it is a city with a population of over two million, or that it has never filed an income-tax return. I don't know why anyone would, but one could.

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[42] I am sure that Lewis says this somewhere, but I can't find the passage I seem to remember.

Let us call such things, propositions and things that can be said of things, *assertibles*. The assertibles that are not propositions, the things that can be said *of* things, we may call *unsaturated* assertibles.[43] (And we shall say that propositions are saturated assertibles.) I will assume that the usual logical operations apply to assertibles, so that, for example, if there are such assertibles as "that it has a population of over two million" and "that it once filed an income-tax return," there is also, automatically as it were, the assertible "that it either has a population of over two million or else has never filed an income-tax return." (In a moment, I shall qualify this thesis.) It follows that the phrase I used to specify the role I wish to consider—"things that can be said of things"—cannot be taken too literally. For if there are any unsaturated assertibles, and if there are arbitrary conjunctions and disjunctions and negations of such unsaturated assertibles as there are, it will be impossible for a finite being to say most of them of anything. "Things that can be said of things" must therefore be understood in the sense "things that can in principle be said of things" or perhaps "things of a type such that some of the simpler things of that type can be said of things" or "things that could be said of things by a being without limitations." All these ways of qualifying 'said of' could do with some clarification, but I cannot discuss the problems they raise here. (One possible solution to the problem raised by human limitations for our role-specification would be to substitute something like 'can be true of' or 'is true or false of' for 'can be said of' in our specification of the unsaturated-assertible role. This is, in my view, a promising suggestion, but I do think that 'can be said of' has certain advantages in an initial, intuitive presentation of the theory of properties I shall present.)

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[43] My use of this term in "A Tbeory of Properties" has caused some confusion. Observing, correctly, that I have borrowed it from Frege (the German word is *ungesättigt*), some of the readers of that essay have inferred, incorrectly, that my use of the term implies that I accept something resembling Frege's concept/object distinction: a property/object distinction modeled on the concept/object distinction. Far from it, however, for I do not understand the concept/object distinction. For, to return to a point I made in Section 1 of this chapter, the objects I call properties are just that: objects. More exactly, they are objects in the very general sense that this word has in logic and mathematics: a property can be the referent of a noun or a noun-phrase ('wisdom'; 'Solomon's most famous property'; 'the property of being an $x$ such that $x$ is wise') and properties can be "quantified over" ('Some properties are uninstantiated'; 'An impossible property entails every property'). When we quantify over properties, moreover, we use the same logical machinery that we use when we quantify over shoes and ships and bits of sealing wax.

It seems to me that there are such things as unsaturated assertibles: there are things that can be said of things. It seems to me that there is an *x* such that *x* can be said of *y* and can also be said of *z*, where *z* is not identical with *y*. One of the things you can say about the Taj Mahal is that it is white, and you can say that about the Lincoln Memorial, too. (I take it that 'about' in this sentence is a mere stylistic variant of 'of'.) If, in a discussion of the relative academic stature of two great seats of learning, one were to say, "All the negative things you've said about Oxford are perfectly true, but don't you see that they're equally true of Cambridge?," one's audience would not regard this sentence as logically or syntactically or lexically problematical. (And if one said 'perfectly true *of it*' in place of 'perfectly true', the phrasing of that statement, too, although perhaps wordy or pedantic, would be regarded as logically and syntactically and lexically unproblematical.) I say it seems to me that there are such things. I certainly see almost no reason to *deny* that there are such things, other than the reasons we have (and which I have tried to lay out) for denying that there are abstract objects of any sort. (For assertibles, if they exist, are certainly abstract objects.) I say 'almost no reason' because there are, I concede, powerful "Russellian" objections to admitting assertibles into our ontology. If there are things that can be said, there are things that can be said of things that can be said. We can say of a proposition that it is false or unsupported by the evidence. We can say of "that it is white" that it can be truly said of more than one thing. Now *one* of the things we can say of "that it is white" would seem to be that it isn't white. That's a thing that can be said *truly* of "that it is white"—a thing that can be said of something is obviously not a visible thing, and only a visible thing can have a color—so, *a fortiori*, it's a thing that can be said truly of "that it is white." It would seem, therefore, that one of the things we can say about "that it is white" is that it can't be said truly of itself. And it would seem that we can say the very same thing, of, for example, "that it has a population of over two million." It seems evident, therefore, that, if there are things that can be said of things, one of them is "that it can't be said truly of itself." What could be more evident than that this is one of the things that can be said (whether truly or falsely) of something? But, of course, for reasons well known to anyone who is likely to be reading these words, whatever things that can be said of things there may be, it can't be that one of them is "that it can't be said truly of itself." At any rate, there can't be such a thing if—as we are supposing—anything that can be said of something can be said of anything. If, therefore, we accept the conditional 'If there are things that can be said of things, one of them must be "that it can't be said truly of itself"', we can only conclude that there are no things that can be said of things. Well, I choose to deny the conditional. It's true that it seems self-evident. But, then, so did, 'If there are sets at all, then, for every open sentence such that every object either determinately satisfies that sentence or determinately satisfies its negation, there exists a set whose membership comprises exactly those objects that satisfy it' till Russell discovered an open sentence such that no set comprises exactly those objects that satisfy it.

There are many workable ways of dealing with the consequences of the fact that the description '$\{x \mid x \notin x\}$' does not have a referent. (Workable in that, first, they generate a universe of sets sufficient to the needs of the analysts and algebraists and topologists who use set theory as a tool; and, secondly, none of them is known to lead to a contradiction—and there's no particular reason to think that any of them does.) None of these "workable" ways of dealing with the paradox is, perhaps, entirely satisfactory. In the case of so-called first-order set theories, the workable ways of dealing with the paradox are workable ways of saying that certain open sentences must correspond to sets—and leaving it an open question which, if any, of the others do.[44] The friends of things that can be said of things can easily adapt any of the standard, workable ways of dealing with the paradox to the task of saying which open sentences must correspond to things that can be said of things (as, e.g., '$x$ is wise' corresponds to "that it is wise." These adaptations will, I think, be neither more nor less intellectually satisfying than their set-theoretical analogues or counterparts.

I propose, therefore, that properties be identified with unsaturated assertibles, with things that can be said of things. It is at least a defensible position that unsaturated assertibles can successfully play the property role. I would ask this: what is the property whiteness but something we, in speaking of things, occasionally predicate of some of them? And what is predicating something of something if it is not *saying* the former *of* the latter? Well, perhaps someone will protest that it sounds wrong or queer to say that whiteness is one of the things we can say of the Taj Mahal. I don't think that arguments that proceed from that sort of premise have much force, but I won't press the point. Anyone who thinks that unsaturated assertibles—from now on, I'll say simply 'assertibles'—can't play the property role but is otherwise friendly to my arguments may draw this conclusion from them: there are, strictly speaking, no properties, but assertibles may be pressed into service to do the work that would fall to properties if it were not for the inconvenient fact that there are no properties to do it. If we suppose that there are assertibles, and if we're unwilling to say that assertibles are properties, what advantage should we gain by supposing that there are, in addition, things that we *are* willing to call properties?

Now if properties are indeed assertibles, a wide range of things philosophers have said using the word 'property' make no sense. For one thing, a property, if it is an assertible, cannot be a part or a constituent of any concrete object. If this pen exists, there are no doubt lots of things that are in some sense its parts or constituents: atoms, small manufactured items; perhaps, indeed, every sub-region of the region of space exactly occupied by the pen at *t* is at *t* exactly occupied by a physical thing that is a *part* of the pen if it is metaphysically possible for it to be occupied by a physical thing. But "that it is a writing instrument," although it can be said truly of the pen—and is thus, in my view, one of the properties of the pen—is not one of the parts of the pen. Nor is it—in any possible sense of the world 'constituent'—a *constituent* of the pen. That it is not a part or constituent of the pen is as evident as it is that the pen is not a cube root of any number. Nor is "that it is a writing instrument" in any sense present in any region of space. It makes no sense, therefore, to say that "that it is a writing instrument" is "wholly present" in the space occupied by the pen. In my view, there is just nothing *there* but the pen and its parts (parts in the "strict and mereological sense"—parts that are, like the pen itself, physical things). There are indeed lots of things true of the pen, lots of things that could be said truly about the pen, but those things do not occupy space and cannot be said to be wholly (or partly) present anywhere.

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[44] With the exception of a few rare sentences like '$x \notin x$' and '$x$ is a set' that can be proved *not* to correspond to sets.

If properties are assertibles, it makes no sense to say that properties are somehow more basic ontologically than the objects whose properties they are. (Nor does it make sense to say that a concrete thing is more basic ontologically than an assertible.) A chair cannot, for example, be a collection or aggregate of the properties ordinary folk say are the properties of a thing that is not a property, for a chair is not a collection or aggregate of all those things one could say truly of it. Nor could the apparent presence of a chair in a region of space "really" be the co-presence in that region of the members of a set of properties, if, for no other reason, because there is no way in which a property can be present in a region of space. (I hope no one is going to say that if I take this position, I must believe in "bare particulars." A bare particular would be a thing of which nothing could be said truly, an obviously incoherent notion.)

Properties, if they are assertibles, are in no way objects of perception. If colors are properties and properties are assertibles, then the color white is the thing that one says of something when one says of it that it is white. And this assertible is not something that can be seen—just as extracting a cube root is not something you can do with a forceps. We never see properties, although we see *that* certain things have certain properties. (Looking at the pen, one can see that what one says of a thing when one says it's cylindrical is a thing that can be said *truly* of the pen.) Consider sky-blue—the color of the sky. Let us suppose for the sake of the illustration that nothing—no exotic bird, no flower, no 1958 Cadillac—is sky-blue. (If I say that nothing is sky-blue, it's not to the point to tell me that the sky is sky-blue or that a reflection of the sky in a pool is sky-blue, for there is no such thing as the sky and there are no such things as reflections. And don't tell me that when I look at the sky on a fine day I perceive a sky-blue quale or visual image or sense-datum, for there are no qualia or visual images or sense-data. I may be sensing sky-bluely when I look at the sky on a fine day, but that shows at most that something has the property "sensing sky-bluely"; it does not show that something has the property "being sky-blue.")[45]

Kant has famously said "Sein *ist offenbar kein reales Prädikat*" ('*Being* is obviously not a real predicate'), and this is often paraphrased in English as 'Existence is not a property' and many philosophers have treated this sentence as a pithy statement of an obvious truth. Are they right or wrong? They are wrong, *I* say, if there is such a thing to be said about something as that it exists. And it would seem that there is. Certainly there is *this* to be said of a thing: that it might not have existed. And it is hard to say how there could be such an assertible as "that it might not have existed" if there were no such assertible as "that it exists."

Are there properties that, as one might say, express the identities of particular things?—properties like "being *that* object" and "being (identical with) Plato"? I will call properties of that sort *haecceities*. (In what follows, 'haecceity' is to be understood as a pure term of art, a word whose meaning is the meaning assigned to it by the definition that follows—and that meaning is not the meaning of *haecceitas* in the writings of Duns Scotus, or the meaning of τὸ τί ἐστι in the writings of Aristotle.[46]) I define this word as follows:

> For any object, *the* haecceity *of* that object is the property of being identical with that object.[47]
>
> *An* haecceity is a property that is possibly the haecceity of something.[48]

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[45] Jonathan Bennett has contended that even if, as I have asked you to suppose, nothing is sky-blue, it is possible to *see* the property "being sky-blue." After all (he argued), this property is in some way involved in the visual experience I have when I look at the sky, and this fact can't be explained by saying that when I look at the sky I'm seeing something that has it, for (we are supposing) nothing has it. And what is there left to say but that when I look upwards on a fine day I see the uninstantiated property "being sky-blue"? I would answer as follows: since the property "being sky-blue" is just one of those things that can be said of a bird or a flower or a 1958 Cadillac (or, for that matter, of human blood or the Riemann curvature tensor), we obviously don't *see* it. It's involved in our sensations when we look upwards on a fine day only in this Pickwickian sense: when we do that, we sense in the way in which upward-gazing visitors to the airless moon would sense during the lunar day if the moon were surrounded by a shell of sky-blue glass. And why *shouldn't* we on various occasions sense in the way in which we should sense *if* an X were present when there's in fact no X there? (The position I have ascribed to Bennett is a report of something he said in conversation. I do not know whether he has asserted or defended it in his published work.)

[46] It is not even the meaning that I myself have always assigned to the word: in another place I have used 'haecceity' to express the concept that would be expressed in the present terminology by 'instantiated haecceity'.

[47] Here I assume that it is possible to quantify into contexts formed on the phrase 'the property of being'. This is a delicate matter, since, e.g., 'the property of being identical with *x*' is an intentional context: the property of being identical with Plato is not the property of being identical with the author of *The Republic*.

[48] Suppose there is such a property as being identical with me, '=PvI' for short. Suppose I had not existed. Suppose that properties are necessary existents—or assume at least that =PvI could exist if I did not. Assume that if I did not exist, it would nevertheless be possible that I exist. Or, in "possible worlds" terms, assume that there are worlds in which =PvI exists and PvI does not; assume that, from each of those worlds, some world in which PvI exists is accessible.) Let *x* be one of those worlds. In *x*, =PvI exists—and yet for no *y* is =PvI the property of being identical with *y*: if in *x* God examines every object,

For example, consider Boethius' *Platonitas*—that is, Platonity or the property of being Plato. If that property indeed exists, it seems reasonable to assume that it is, for a certain object—Plato, of course—, the property of being that object. This property, the haecceity of Plato, can also be called '*that it is Plato*' and 'what one says of something when one says of it that it's Plato'. (Obviously, no two things have the same haecceity: if $x \neq y$, then for no $z$ do both $x$ and $y$ have the property of being identical with $z$.)

And *are* there haecceities? Is there really such a property as Platonity?[49] It seems to me to be at least a good *prima facie* case for their existence—and "a good *prima facie* case" is probably the best we can hope for in philosophy. I ask you to consider the following story.

> Crito, Simmias, and Socrates are conversing one foggy day in the Agora. An approaching figure looms in the mist. Crito says, "Ah, Phaedo is about to join our conversation, Socrates." Socrates replies, "No, Crito, he is not, for it is Plato who approaches us." And Simmias adds, "Socrates is not mistaken, Crito. That is indeed Plato."

Surely Socrates said of the mist-shrouded figure that it was Plato? And, surely, Simmias said the same thing of it? If the answer to both these rhetorical questions is Yes, there is something, some one thing, that Socrates and Simmias both said of the approaching figure: they both said of it that it was Plato. And what Socrates and Simmias said of the approaching figure—*that it is Plato*—is what I am calling 'Platonity' and 'Plato's haecceity'. (But if you don't want to call it that, call it something else.) It seems to me that there *that it is Plato* is one of things that can be said of things—and that there are therefore haecceities. We shall have more to say about haecceities in the course of our discussion of the ontology of possibility and necessity in Chapter IV (where, as I said in a note, we shall consider the question whether there are uninstantiated haecceities).

Some philosophers have said that although there are obviously such properties as redness and roundness, it is equally obvious that there is no such property as "being either red or not round." They have said, to use a phrase they favor, that the world, or the Platonic heaven, is "sparsely," not "abundantly," populated with properties. Are they right? If properties are assertibles, only one answer to this question seems possible: No. If one of the things you can say about something is

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he will see that for none of them is =PvI the property of being identical with that object. Nevertheless, in $x$, =PvI is *possibly*, for some $y$, the property of being identical with $y$. Therefore, =PvI is in $x$ an haecceity. In Chapter IV, we shall consider the question whether uninstantiated haecceities are possible.

[49] Alvin Plantinga once presented a powerful empirical argument for the existence of his own haecceity: he displayed a photograph of himself standing beside a road-sign in Scotland that pointed the way to Alness. Unfortunately, this argument is not available to me, owing to my denial that properties have spatial locations.

that it is red and another thing you can say about something is that it is not round, then—surely?—one of the things you can say about something is that it is either red or not round. (Mars is either red or not round, and *that*, the very same thing, is true of the Taj Mahal and true of the number four—given, of course, that all three objects exist.) It is, of course, our answer to the question 'Is the world sparsely or abundantly supplied with properties?'—"abundantly"—that eventually leads to our troubles with Russell's Paradox. But, again, the alternative doesn't seem possible.

Some philosophers have denied the existence of uninstantiated properties. Is this a plausible thesis? If properties are assertibles, it is a very implausible thesis indeed, for there are obviously things that can be said of things but can't be said *truly* of anything: that it's a—non-metaphorical—fountain of youth, for example. No doubt someone, Ponce de León or some confidence trickster, has said this very thing about some spring or pool. (If there are uninstantiated properties, are there *necessarily* uninstantiated properties? Yes indeed, for one of the things you can say about Griffin's *Elementary Theory of Numbers* is that it contains a proof of the existence of a greatest prime number. You can say it about *Tess of the D'Urbervilles*, too. It would seem, moreover, that one of the things you can say of something, one of the things that is "there" to be said about a thing, is that it is both round and square.)

Some philosophers have said that properties exist only contingently. This would obviously be true if there could not be uninstantiated properties, but it would be possible to maintain that there are uninstantiated properties and that, nevertheless, some or all properties are contingently existing things. Could this be? Well, it would certainly seem not, at least if the accessibility relation[50] is symmetrical. One of the things you can say about something is that it is white. Are there possible worlds in which there's no such thing to be said of a thing as "that it is white"? (Not "said *truly* of a thing": "said of a thing either truly *or* falsely," "said of a thing *full stop*.") Suppose that *W* is such a world. In *W*, unless I'm mistaken, it's not even possibly true that something is white. Imagine, if you don't mind using this intellectual crutch, that God exists in *W*. Then God, who is aware of every possibility, is not aware of the possibility of there being something white. (If God could be aware of or consider the possibility of there being something white, he would have to be aware that one of the things that can be said of something is that it is white.) Therefore, there must be no such possibility in *W* as the possibility of there being something white. But α, the actual world is well supplied with white things. Therefore, α is not even possible in *W*; that is to say, α—*our actual situation*, the *situation in which we find ourselves*—doesn't exist in *W* (or exists but is impossible). But then (since *W* is accessible from α) the accessibility relation is not symmetrical. Earlier in this chapter, I quoted Gödel's well-known remark about the axioms of set theory: each of them forces itself upon the mind as true. That is just what I would say about the proposition that the accessibility relation is symmetrical. Admittedly, there are steps in this argument that can be questioned and have been questioned—or at least the corresponding steps in certain very similar arguments have been questioned. One might, for example, argue as follows.

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[50] A possible world *w′* is accessible from a possible world *w* just in the case that everything that is true in *w′* is possible in *w*.

> I grant that if "that it is white" exists only contingently, then there is a world *W* in which α does not exist—that is, if *W* *were* actual, α *would not* exist. Nevertheless, the two abstract objects *W* and α *in fact* both exist, and we may therefore speak of the relations that (in fact) hold between them. In particular, we may point out that the *existence* of *W* is compatible with the *existence* of α, and we may express this fact by saying that the existence of α (although it is not possible *in* the world *W*) is possible *with respect to* the world *W*. And we may re-define the accessibility relation in term of "possibility with respect to": $w'$ is accessible from *w* just in the case that $w'$ is possible with respect to *w*. Since '$w'$ is accessible from *w*' is equivalent to '*w* exists in $w'$', the symmetry of the accessibility relation follows immediately.

There are many other interesting and important theses about properties than those I have considered. But the theses I have considered are, or so it seems to me, all the interesting and important theses to which the theory of properties as assertibles is relevant. The fact that this theory is inconsistent with various interesting and important theses about properties shows that, although it may be very close to being vacuous, it does not manage to be entirely vacuous.

# IV

# Being and Possibility

**1.** My topic in this chapter is the ontology of possibility. Before I turn to ontology, however, I want to make some remarks about the kind of possibility whose ontology we shall be discussing. (To adapt my remarks on possibility to other modal concepts, the reader need only turn to various well-known equivalences: a proposition is necessary if its denial is not possible, and so on.)

The kind of possibility that is our topic is not epistemic possibility: it is not the kind of possibility that anyone who uttered any of the following sentences would almost certainly intend: ‘It’s entirely possible that she will resign her chair next year’; ‘Have you considered the possibility that your review offended him?’; ‘Maybe the equation has an imaginary solution’. For a proposition to be epistemically possible is for it to be true for all I know (or perhaps ‘for all we know’, or perhaps ‘for all anyone knows’), a notion that it is as hard to provide a useful analysis of as it is easy to understand.[1]

Epistemic possibility is generally opposed to “alethic possibility.” In this chapter, we shall be concerned only with alethic possibility, and, more specifically, with the kind of alethic possibility that is sometimes called “logical possibility”—or (by those who aware that a really obvious difficulty attends this label) “broadly logical possibility.” These phrases seem to me to be worse than useless, as least as names for the kind of possibility I am interested in. For one thing—let us turn for a moment to impossibility—something that is mathematically impossible is impossible in just the sense I am interested in, but the non-existence of a differentiable function that cannot be approximated locally by any linear function is not a matter of logic.[2] We may say that a state of affairs is “logically impossible” if can be

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[1] We used to be able to express epistemic possibility unequivocally, at least in many contexts, by the use of ‘may’ (as opposed to ‘might’): ‘She may have been ill that day’ meant ‘For all we know, she was ill that day’, while ‘She might have been ill that day’ could have meant that, but it could also have been used to express possibility in another sense—as it does in this context: ‘Everyone’s success depends partly on luck. For example, Sarah did brilliantly on her fellowship exam, but she might have been ill on the day of the exam. If she had been, someone else would probably have got the fellowship’. Sadly, the useful distinction between ‘may’ and ‘might’ is fast becoming obsolete. One first-rate philosopher (a native speaker of American English, born *c.* 1970) once told me that he could detect no difference between ‘she may have’ and ‘she might have’. The obsolescence of the distinction seems to be even more advanced in Britain than in the U.S..

[2] Not at any rate of first-order logic (so-called). Quine has described higher-order logic (so-called) as set theory in sheep’s clothing, a remark which I enthusiastically endorse—although I’d prefer to say that it was property theory in sheep’s clothing or semantics in sheep’s clothing. (“Set Theory in Sheep’s Clothing” is a section heading in chapter 5 of *Philosophy of Logic*)

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demonstrated that it does not obtain using only the resources of logic (or, to be liberal, those resources eked out with some information about the meanings of words). For example, the existence of a round square is logically impossible because (so attention to the meanings of the words 'round' and 'square' tells us) a round square would both have and not have corners or vertices—and there are, therefore, no round squares.[3]

But what of logical *possibility*? How is the notion of logical possibility related to the notion of logical impossibility? Given that we understand logical impossibility, do we thereby understand logical possibility? Well, shall we say that a state of affairs is logically possible if it is not logically impossible? If we say that, we are saying that a state of affairs is logically possible if it cannot be demonstrated using only the resources of logic (and facts about the meanings of words) that it does not obtain. I might carp about the word 'cannot' in the proposed definition,[4] but I want to make another sort of point. I very much doubt whether it can be shown, using only the resources of logic and facts about the meanings of words that no time machine will ever exist. But I'm inclined to think that the existence of a time machine is as impossible as the existence of a round square or a greatest prime. I'm inclined to think that there is *no* sense in which a time machine is possible. I grant that I'm by no means sure that a time machine is "as impossible as a round square," or that a time machine is in *no* sense possible. But that doesn't affect my point, which is that I don't regard the argument, "Logic (etc.) does not afford a proof that there are no time machines; hence, the existence of time machines is possible" as valid, that I don't think that there is any sense of 'possible' such that the impossibility of demonstrating the non-existence of time machines by purely logical means proves that their existence is "possible" in that sense. I conclude that 'logically possible' is a useless term, even given that "logically impossible" is a useful term. (The meaning of 'logically impossible' is partly epistemological: to say

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Or leave logic—the specification of the rules of valid inference—aside. Consider only the *language* of "higher-order logic," whose characteristic attribute is that it allows bindable variables to occur in predicative (including sentential) positions. I am able to understand a sentence like '$\forall x \exists \mathrm{F}\, \mathrm{F}x$' only as a misleading way of writing '$\forall x \exists y$ ($y$ is a property & $x$ has $y$)' (or perhaps '$\forall x \exists y$ ($y$ is a one-place predicate & $x$ belongs to the extension of $y$)') Quantification into other than nominal positions will be discussed in Chapter V.

[3] Since there is logical impossibility, there is logical necessity. A state of affairs is logically necessary if its denial or negation is logically impossible. Or, what is the same thing, it is logically necessary that $p$ if it can be shown that $p$ given only the resources of logic and some facts about the meanings of words. (How can facts about the meanings of words, which are certainly contingent facts, be relevant to whether a proposition—a non-linguistic entity—is necessary? This problem was much discussed in the fifties of the last century, when it was generally believed by philosophers that all necessity was logical necessity. To discover its solution, complete the following exercise. Reconstruct the following argument in such a way that the result is both formally valid and philosophically interesting: "The meaning of the word 'nun' is 'woman who belongs to a religious order that requires its members to take vows of poverty, chastity, and obedience'. Therefore, it is a necessary truth that all nuns are women.")

[4] This sort of carping: If you think that it's permissible to use the word 'cannot' (in this sense) in a definition of 'logically possible', why not avail yourself of the following simpler definition: a state of affairs is logically possible if it's not true that it cannot obtain.

that something is logically impossible is to say that it is impossible and that its impossibility can be discovered by a certain method. If, therefore, a thing is *not* logically impossible, all that follows is that *either* it is possible *or* it is impossible and its impossibility cannot be discovered by that method: the negation of logical impossibility is not a species of possibility.)

George Bealer has made more or less the same point, and in a very clever and insightful way.[5] He has asked his readers to reflect on the idea of *sentential* possibility. It is sententially possible that *p* if it cannot be proved, using sentential logic alone, that it is not the case that *p*. Thus, while it is not sententially possible for it to be the case both that the moon is spherical and that the moon is not spherical, it is sententially possible for there to be *something* that is both spherical and not spherical. (And for there to be something that is not identical with itself and for there to be three planets each of which is the largest planet....) And this is obvious nonsense: you can so define 'sentential possibility' if you like, but sentential possibility, so defined, is not a species of possibility—for there is *no* sense of 'possible' in which it is possible for there to be something that is both spherical and not spherical. I would add the following postscript to Bealer's point. It makes at least some sort of sense to speak of sentential *impossibility*: That it should be the case both that the moon is spherical and the moon is not spherical is not merely *logically* impossible (like the thesis that something is both spherical and not spherical), but *sententially* impossible. That is, you don't need the resources of quantificational logic to show that it is not the case that that the moon is spherical and the moon is not spherical; mere sentential logic will do.

**2.** What, then is this "possibility" whose ontology is our subject in this chapter? It is not epistemic possibility, and it is not logical possibility (there being no such thing). And it isn't physical possibility, is it?—or biological possibility or technological possibility or any of these "restricted" or "qualified" kinds of possibility? No, it is something more fundamental than these. "What then?" I answer that it is what ties all these "qualified possibilities" together and makes them all species of a genus—the genus "alethic possibility." Take physical possibility, consistency with the (actual) laws of nature.[6] A proposition is physically possible if its conjunction with the laws of nature is... well, *possible*. Possible *tout court*. Possible *simpliciter*. Possible *full stop*. Possible *period*. Explanations come to an end somewhere. I can say only that by possibility I mean (alethic) possibility without qualification. If there were no such thing as possibility without qualification, there could be no such thing as possibility *with* qualification. Absent the *genus* "possibility," there could not be *species* of possibility like physical and biological possibility. If we understand "qualified" possibility statements (of any sort), we must understand "unqualified" possibility statements. And what I have said about possibility applies to modality generally: If there were no such thing as modality without qualification, there could be no qualified modalities like physical necessity or biological possibility. If we understand "qualified" modal statements (of any sort), we must understand "unqualified" modal statements.

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[5] See his "Modal Epistemology and the Rationalist Renaissance". The point is made on pages 78 and 79.

[6] The phrase 'physical possibility' is ambiguous. It might refer to a kind of possibility such that the possibilities of that kind never change—to wit, consistency with the laws of nature. *Or* it might refer to a kind of possibility such that the possibilities of that kind change from moment to moment—to wit, consistency with the laws of nature and the (actual) past at a given moment "taken together." In this chapter, it will have only in the former sense.

What I have called modality without qualification, some have called "absolute" or "intrinsic" or "ontological" or "metaphysical" modality. The first two seem good enough names. I don't find "ontological" or "metaphysical" particularly appropriate tags, however. I don't think that unqualified or absolute or intrinsic modality is in any clear sense an ontological or metaphysical concept.[7] An analogy is perhaps provided by "truth without qualification" (as opposed, for example, to mathematical, scientific, or historical truth). One *might* call "truth without qualification" ontological or metaphysical truth, but these wouldn't be particularly appropriate tags.[8]

**3.** Let us now turn to modal ontology—to the ontology of unqualified alethic modality. (All the modal idioms used in the sequel should be regarded as expressing unqualified—"absolute" or "intrinsic" or "ontological" or "metaphysical"—modality.)

I will begin my discussion of modal ontology by quoting one of the most famous (or notorious) passages that has ever been written by an analytical philosopher.

> I believe that there are possible worlds other than the one we happen to inhabit. If an argument is wanted, it is this. It is uncontroversially true that things might have been otherwise than they are. I believe, and so do you, that things could have been different in countless ways. But what does this mean? Ordinary language permits the paraphrase: there are many ways things could have been besides the way they actually are. On the face of it, this sentence is an existential quantification. It says that there exist many entities of a certain description, to wit 'ways things could have been'. I believe that things could have been different in countless ways; I believe permissible paraphrases of what I believe; taking the paraphrase at its face value, I therefore believe in the existence of entities that might be called 'ways things could have been'. I prefer to call them 'possible worlds'.

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[7] Well, this is my official position—but I have to admit that I have been known to use the phrase 'metaphysical possibility' myself. (In this very book, in fact.) Don't do what I do, do what I say.

[8] It is to truth without qualification that Tarski's "Convention T" applies. It is said that reflection on Convention T convinced many logical positivists that truth was not a metaphysical concept. For once, the logical positivists were right.

This passage would seem to be an application of a meta-ontology essentially identical with the meta-ontology proposed in Chapter I of the present book and applied in Chapter II and Chapter III. I think that the argument of this passage is entirely correct and convincing: there are things that satisfy the open sentence '*x* is a way things could have been'. But to say this much is not to say anything very interesting about what "ways things could have been" are; it is not to say anything very interesting about what properties, features, characteristics, or attributes ways things could have been have. And this is the usual result of applying arguments of this kind. Such arguments show (at most) that a certain open sentence—'*x* is a hole', '*x* is an anatomical feature', '*x* is a fictional character'—is satisfied; their conclusions say nothing explicit (and little enough that is tacit) about the nature, the properties, of the objects that satisfy the sentence.

Given that '*x* is a way things could have been' is satisfied, what sort of object satisfies it? What features would such objects have? What are they like? According to David Lewis, who is, of course, the author of the notorious passage,[9] we are surrounded by an example of a way things could have been. It is the one among them that is the way things are, and it is . . . Well, it is *just those things*. Or, if 'it is' must be followed by a singular term, it is their mereological sum or fusion: it is the universe. If one is a materialist or physicalist (as Lewis is) one will identify the universe with the physical universe, this huge physical thing that has us and all we survey as parts and has as its other parts every other physical thing that is in any way related to us in space and time. If one believes in non-physical things (God, angels, Cartesian egos), and if one otherwise agrees with Lewis, one will say that the universe—the object that is at once the way things are and (the sum of) the things that are that way—comprises these non-physical things as well. If one believes, as Lewis does not, that there can be causal relations between things that are not spatio-temporally related, one will want to say that the universe contains not only those things that are related to us in space and time, but all those things that are causally related to us as well. If, moreover, one believes that "being causally related" is not a transitive relation—it is obvious that "being spatio-temporally related" is transitive; it is not at all obvious that "being causally related" is transitive[10]—one will want to say that the universe comprises all those things that are related to us by the ancestral of "being causally related." To be on the safe side, then, let us say that the universe—the way things are—is the mereological sum of all those things that are either spatio-temporally related to us or are related to us by the ancestral of "being causally related."[11]

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[9] The passage occurs on p. 84 of Lewis's *Counterfactuals*. I have also discussed Lewis's "concretist" modal ontology in Chapter III—there in connection with his ontology of properties. This has, unfortunately, resulted in a certain amount of "overlap" between that chapter and the present chapter. Unfortunate—but I could hardly have asked my readers continually to consult Chapter III while reading Chapter IV, or (worse) continually to consult Chapter IV while reading Chapter III.

[10] Consider a galaxy *G* whose light has taken ten billion years to reach us; its present distance from us is much greater than the ten billion light-years that *now appears to us* to be its distance from us, owing to the ongoing expansion of space over that ten-billion-year interval. *G* receives light from galaxies whose light will never reach us (that is, it will never reach the matter of which we are currently composed). Those galaxies are causally unrelated to us, although we and they stand in the ancestral of "causally related," since they affect *G* and *G* affects us. (There are, to be sure, causal relations other than

If the universe is the way things are, then the "possible worlds other than the one we happen to inhabit," the ways things might be but aren't, are, Lewis tells us, other things of the same sort, other universes. If things could indeed have been different in countless ways, there must be a vast number of other universes. These other universes are separated from ours simply by their lack of spatio-temporal (and causal) connection with ours.[12]

But (someone might well ask) if there are all these universes, how do we know that *our* universe, the one we are parts of, is the way things are and not simply one of the ways things could have been but aren't? Or we might lay aside the question how we know that our universe is the way things are and ask how *any* of the universes, ours or some other, could enjoy the distinction of being the way things are? By what criterion can one single out one of the many universes—which must all be "equally real," whatever exactly that means—and say, "This one and no other is the way things are." Lewis's answer is simplicity itself: *our* universe is *by definition* the way things are. 'The universe that is the way things are' (that is, 'the actual world') and 'our universe' are synonymous, or at least as close to being synonymous as 'the present era' and 'our era'. The word 'actual', in the sense it has in the philosophy of modality, is an *indexical* term, like 'here' and 'now' and 'us': its referent, when it is uttered in a given set of circumstances, is a function of that set of circumstances. It follows that the inhabitants of every universe that has inhabitants, if they attach to 'the way things are' and 'the actual world' the same sense as the sense we attach to them, correctly call their universe 'the way things are' and 'the actual world'. (Compare the case of the inhabitants of other eras and the phrase 'the present era'.) This is the famous (or infamous) 'indexical theory of actuality', a theory to which we shall briefly return in Section 4.

Philosophers who organize their modal discourse by reference to possible worlds do not confine themselves to saying that possible worlds exist and that

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those mediated by the transmission of light. But if light from a certain galaxy will never reach us owing to the expansion of space, that galaxy will never affect us in any way whatever.) The simultaneity relations presupposed by this statement are those of "cosmological time."

[11] This account of "the universe" presupposes some very strong principle of mereological summation. Lewis, of course, accepts the very strongest principle of mereological summation, that just any objects have a unique mereological sum. I myself accept only a very weak principle of mereological summation (see my book *Material Beings*, particularly section 9), and, as a matter of fact, I do not believe that there is any such object as the universe. (For that matter, I do not believe that there is any such object as the earth.) But this is not the place at which to press this point.

[12] Lewis's modal ontology receives its most complete statement and defense in *On the Plurality of Worlds*. Certain aspects of this ontology were discussed in Section 6 of Chapter III.

exactly one of them is actual. In order for reference to possible worlds to be a useful means of organizing our modal discourse, those who employ it need to be able to say three further sorts of thing. They need to be able to speak of a given proposition's being either true or false in (at, with respect to) a given world,[13] they need to be able to speak of a given object's existing or failing to exist in a given world, and they need to be able to speak of a given object's having or failing to have a given property in a given world. They need to be able to say things like the following: 'The proposition that Napoleon lost the battle of Waterloo is false in any world in which Napoleon does not exist'; 'A contingently true proposition is a proposition that is true in the actual world but false in at least one world'; 'Since Gloria van Inwagen is childless in some possible worlds, and since in every world in which I exist Gloria van Inwagen is my mother, there are worlds in which I do not exist'; 'If there is a species of animal in some world whose members have all the anatomical features (actual) tradition ascribes to unicorns, then there is a possible world in which there are animals of two distinct species, each of which has all the features tradition ascribes to unicorns'. (I am convinced that each of these illustrative sentences expresses a truth, but my point does not depend on this conviction. My point is that if possible-worlds talk is to be of use in organizing our modal discourse, we must be able to form and to understand sentences of the sorts this list illustrates.) In order to say things of these sorts, we need to have at our disposal four open sentences: '(the proposition) $x$ is true in (the world) $y$', '(the proposition) $x$ is false in (the world) $y$' '$x$ exists in (the world) $y$', '$x$ has (the property) $y$ in (the world) $z$'. (I will, however, assume that the second sentence is equivalent to 'it is not the case that $x$ is true in $y$' and therefore need not be discussed as a separate case.)

How does Lewis understand truth-in-a-world and existence-in-a-world? (He prefers 'at' to 'in'—but what's at a word?) Lewis's explanation of these concepts introduces a certain messiness into his otherwise very elegant account of ways things could have been. In many cases, we could say that (according to Lewis) a certain thing exists in a certain possible world if it, the thing, is a part of it, the world. And we could say that a proposition is true in a world if it is true given that the range of its variables is restricted to parts of that world and the names and descriptions the proposition contains denote parts of that world.[14] (Let us say that a proposition that has this feature with respect to a world $x$ is "semantically grounded in" $x$.) Thus, the proposition that flying pigs exist is true in a world just in the case that some parts of that world are flying pigs. The proposition that the Eiffel Tower is made of iron is true in a world just in the case that the Eiffel Tower is a part of that world and it is made of iron. And, of course, we shall say that an object exists in a world (or is an inhabitant of that world) if and only if it is a part of that world.

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[13] Like all writers on this topic, I will often abbreviate 'possible world' to 'world'.

[14] I am not being careful about distinguishing sentences and propositions. Nothing I say will exploit this carelessness.

"In many cases." Universally quantified statements (and negations of existentially quantified statements) raise a difficulty for the thesis that a proposition is true in a world just in the case that it is semantically grounded in that world. 'All pigs are incapable of flight' is (no doubt) true (*sc.* in the actual world) on this definition. And indeed that statement is (no doubt) a plausible candidate for the office "true statement." *But*—supposing there to be flying pigs in other worlds, it is strictly speaking false. We shall return to this problem.

Another (but not unrelated) problem is created by the fact that not all objects are parts of worlds.

What sorts of object are not parts of worlds? Consider first "impossible" objects, objects that overlap more than one world. If the Leffie Tower is an object that is a part of some possible world other than ours, then the mereological sum of the Eiffel Tower and the Leffie Tower is an impossible object—since it does not exist in, is not a part of, any possible world. But the proposition that the Eiffeleffie Doublet (so to call it) is an impossible object is true. And since I, who am an inhabitant of this world, speak the truth when I assert it, it must be true in this world. And yet the Eiffeleffie Doublet is not a part of this world. And similarly for the proposition that there are impossible objects; this proposition is true in this world (and in all worlds), despite the fact that '$x$ is an impossible object' is not satisfied by any part of this world (or any part of any world).

This example of objects that are not parts of any world (impossible objects) depends on some very special features of Lewis's modal ontology. Abstract objects constitute a second and more obvious example of a kind of object whose members are not parts of worlds. One of the things that is true of the number 0—true of it in our world, and true of it in every other world as well—is that you can't divide anything by it. And yet the number 0 is not a part of any physical object and thus not a part of our world.[15]

There are, moreover, or so it would seem, sentences that cannot be regarded as either referring to objects (even abstract objects) or as generalizations about objects, but which nevertheless express true propositions: 'In many latitudes, temperatures are higher in the summer than in the winter', for example, or 'Relativistic time-dilation is easily demonstrated by appeal to a thought-experiment involving an imaginary (but physically possible in principle) device called a Feynman light-clock'.

The only solution to the problems raised by these cases (impossible objects; abstract objects; propositions that neither refer to objects of any sort nor are generalizations about objects of any sort) is to concede that an adequate definition of 'the proposition *x* is true in the world *y*' must appeal to something more than semantical grounding. It must, I would maintain, appeal to something like treating a world as a standpoint or as providing a perspective. That is, the definitions of 'true in' and 'exists in' should look something like this:

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[15] The example of course assumes that we have not adopted some ontology of number that has the consequence that numbers are literally parts of physical objects. Compare Lewis, *On The Plurality of Worlds*, p. 95.

$x$ is true in $y =_{df} x$ is true from the standpoint of $y$
$x$ exists in $y =_{df} x$ exists from the standpoint of $y$.

The phrase 'from the standpoint of' must be taken as undefined, although it is subject to two constraints. First, if a world *y* has inhabitants who are capable of making such an assertion, *x* is true from the standpoint of *y* if and only if inhabitants of *y* who asserted the existence of *x* would thereby make a true assertion. As I said a moment ago, "And since I, who am an inhabitant of this world, speak the truth when I assert [that proposition], it must be true in this world." (But, of course, if a world has no inhabitants capable of speech, 'No one ever asserts anything' is true from the standpoint of that world.) Secondly, if an object is semantically grounded in a world, it is true from the standpoint of that world. (Similar constraints apply to '*x* exists in *y*'.) But this is not the end of the matter, even if we are willing to say that we understand the undefined (if constrained) term 'from the standpoint of'. It is time to return to the problem of the flying pigs.

Do flying pigs exist in our world? Well, the expected answer is No. But there are, Lewis is willing to say, cases in which we can say truly that flying pigs exist, certain cases in which we speak "in the philosophy room" (it would be better to say, "in the modal ontology room"), cases in which we have explicitly said or tacitly implied (this is the kind of thing that is said or implied in the philosophy room) that the range of our variables is not subject to the restrictions imposed on it by every normal context. (For in normal discourse about physical things, the range of our variables is restricted to actual physical things, to physical things that are parts of *our* world.) Shall we therefore say that a thing *x* exists in the world *y* if the statement that *x* exists would count as true if it were uttered in the world *y* and in "normal" (non-philosophical) circumstances? (And shall we also say that a proposition *x* is true in the world *y* if the statement that *x* is true would count as true if it were made—in normal circumstances—in the world *y*?) It is a defensible position that the proposed definitions have the "right" consequences.[16] They have,

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[16] Strictly speaking, these are constraints on the application of the concept of existence in a world and truth in a world, and not definitions or analyses of these notions, owing to the fact that there are worlds in which there are no speakers.

Here is the way Lewis puts the matter: "If we evaluate a quantification at a world, we will normally omit many things not in [not parts of—PvI] that world, for instance the possible individuals that for example, the following consequences: that flying pigs do not exist in our world (despite the fact that there are circumstances such that an inhabitant of the actual world who says in those circumstances that flying pigs exist speaks truly), that abstract objects like the number zero exist in our world, that ways things could be but aren't exist in our world, that the proposition that some flying pigs are pink is false in our world, and that necessary truths like mathematical and logical theorems are true in our world (and in every world). Nevertheless, this all seems rather unsatisfying, if only because it is incredibly messy.[17]

Lewis's account of possible worlds faces other problems than the problems of defining existence and truth in a world. There is, for example, the problem of modality *de re*. (Modality *de re*, "the modality of things," is opposed to modality *de dicto*, "the modality of propositions.") Since, according to Lewis, every *res*, every possible concrete physical object, exists in one and only one world, does this not imply that every property of every *res* is essential to it, so woven into its being that it could not exist without having that property? And there is the problem that Lewis calls "the problem of expressing the plenitude." I will discuss the problem of modality *de re* only in the note attached to this sentence.[18] And I will make only a single point about the plenitude problem.

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inhabit other worlds. But we will not omit the numbers, or some of the other sets. Let us say that an individual exists *from the standpoint of* a world iff it belongs to the least restricted domain of quantification that is normally—modal metaphysics being deemed abnormal—appropriate in evaluating the truth at that world of quantifications. I suppose that this domain will include all the individuals in that world; none of the other individuals; and some, but not all, of the sets. There will be many sets that even exist from the standpoint of all worlds, for instance the numbers. Others may not; for instance, the unit set of a possible individual might only exist from the standpoint of the world that that individual is in." (Postscript A to "Counterpart Theory and Quantified Modal Logic," in his *Philosophical Papers*, Vol. I, p. 40.)

[17] And have we *really* got a satisfying account of quantification over ways things could have been? When Lewis says, "I believe, and so do you, that things could have been different in countless ways," is his statement true only because his domain of quantification is, in the context in which he made the statement abnormally inclusive? (See the previous note: "modal metaphysics being deemed abnormal.") In that case it certainly is plausible to say that Lewis was speaking from within the modal metaphysics room. Consider, however, someone who has said, "There were several possible moves open to Kasparov at that point." That statement may have implications for modal metaphysics, but, surely, the speaker was not *engaged* in modal metaphysics and was therefore not speaking from within the modal metaphysics room.

[18] Lewis's solution to the problem of modality *de re* is of course, counterpart theory. See "Counterpart Theory and Quantified Modal Logic," cited in n. 16. (In the Postscripts to that paper in *Philosophical Papers*, Lewis says (p 40): "The language of counterpart theory…had best be understood as quantifying only over possible individuals." Lewis means that the quantifiers of Counterpart Theory should be restricted to parts of possible worlds; excluded from the domain of quantification are both "impossible individuals" like the "Eiffeleffie Doublet," which are parts of two or more worlds, and "non-individuals" like sets, which are parts of no world.) As he says elsewhere (*On the Plurality of* Worlds, p. 213), "Restrict quantifiers, not composition." Note that Counterpart Theory (not simply the formal theory; I include under the heading 'Counterpart Theory' Lewis's philosophical statements about the proper employment of the formal theory) provides an account of statements that are *apparently* modal assertions *de re*; but it actually implies that modality *de re* is an illusion. If there were a single set-in-stone counterpart relation, then modality *de re* would not be an illusion. If there were single counterpart relation, then the following statement would be true:

The plenitude problem is roughly this: Consider any false but possibly true proposition—say, the proposition that there are million-carat diamonds (M). According to Lewis, M is possibly true only if some world has a million-carat diamond as a part. But how are we to discover whether there is such a world? And, more generally, how are we to discover for *every* proposition $x$, whether there is a world in which $x$ is true? We cannot answer this question by saying that every *possible* possible world exists, for, as Lewis says, that would be true if there were only seventeen worlds—or one or none.[19] (After all, the possible worlds *are* the possibilities.) Lewis solves this problem by postulating a certain "principle of recombination," which is, essentially, that one may take any parts of one's own world and tell a logically consistent and spatio-temporally coherent story of combining and duplicating and translating and rotating and expanding and contracting and bending and twisting and . . . those objects, and there will be a world in which intrinsic properties are distributed in space-time exactly as they are in one's story (at the end of it, that is). Now since this principle of recombination implies the existence of possible worlds in which properties are distributed in certain ways in space-time, it implies that it is possible for properties to be distributed in all those ways, and some philosophers will deny that some of those distributions of properties *are* possible. I for one. For example—an example Lewis himself uses—, consider an actual flea. The principle entails that there is a world that is a perfect intrinsic duplicate of that flea. And it therefore entails that it is possible for there to be nothing (that is both actual and concrete) but a flea (or at any rate a thing that has the same intrinsic properties as a flea) and its parts. I myself am virtually certain that it is not possible for there to be nothing concrete but a flea-duplicate and its parts.

But implying the existence of possibilities whose existence is controversial is not the main problem that confronts Lewis's modal ontology. (Nor is implying the controversial thesis that, strictly speaking, modality *de re* does not exist the main problem for his ontology.)

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> If $x$ is a part of the world $y$, there is one well-defined set of parts of worlds (worlds other than $y$) such that a member of that set is a counterpart of $x$ in the world of which it is a part.

And if that statement were true, there would be such a thing as modality *de re*:

> $x$ is an essential property of $y =_{df} x$ is a property of $y$ and of all $y$'s counterparts.

But, Lewis tells us, in any dialectical situation in which one is reasoning counterpart-theoretically, one must specify the "relevant" counterpart relation—a choice that is to be made on pragmatic grounds. There is therefore no general, out-of-context answer to questions like 'Could Saul Kripke have come from a different sperm and egg?'. Counterpart-theoretical reasoners reasoning about Kripke, depending on the Kripke-related topic they are reasoning about, might choose a counterpart relation according to which $x$ is counterpart of Kripke only if $x$ came from counterparts of the sperm and the egg from which Kripke came. Or they might not. They might adopt, for example, a counterpart relation such that any man in another possible world who is very similar to Kripke in date of birth, appearance, habits, and contributions to philosophy is (whatever his genesis may have been) a counterpart of Kripke in that world.

[19] *On the Plurality of Worlds*, p. 86.

*The* problem that confronts Lewis's account of the nature of the things that satisfy '*x* is a way things could have been' is this: it is plainly false. It is just obviously *not true* that ways things might have been but aren't are enormous[20] physical[21] objects that are spatio-temporally unrelated to us. And, most philosophers who think about modality agree with me. (See Lewis on "the incredulous stare.") And (most philosophers think) it is just *not true* the object that Lewis calls 'the actual world' *is* the way things are: rather (they maintain) it *instantiates* or *exemplifies* or *exhibits* a way things could have been, one that is, as a matter of contingent fact, the way things are. It makes no sense (common opinion has it) to identify, as Lewis does, the way things are with (the fusion of) the things that are that way.[22] According to the received wisdom, a way things could have been, whether it is the way things are or is a way things could have been but aren't, is and must be an abstract object of some sort: a possible proposition or relation or state of affairs or set of particle trajectories.

Such modal ontologies (accounts of nature of the satisfiers of '*x* is a way things could have been'), "abstractionist" modal ontologies, are the only ontologies that are in competition with Lewis's modal ontology.[23] (Assuming, at least, that Meinongianism is not in the running. As we saw in our discussion of the ontology of properties in Chapter III, a Meinongian might offer the following account of ways things could have been: Lewis is right about one sort of way things could have been, namely, the way things are, but wrong about the others, namely, the ways things could have been but aren't. The ways things could have been but aren't are universes that are possible but non-existent—or universes that are possible but have no sort of being whatever.)

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[20] Or tiny. Some of them, Lewis says, are fleas, or, more exactly, perfect intrinsic duplicates of the fleas that are parts of the actual world.

[21] And some of them may not be physical: there may be worlds that have "spooks" as inhabitants—or worlds whose inhabitants are unimaginable to us because they are composed of parts related not by spatio-temporal intervals but by external relations of sorts we cannot conceive of, relations that are not spatio-temporal but are formally analogous to spatio-temporal relations.

[22] And even if there were "all these universes" (the complaint of common opinion continues), they wouldn't have anything to do with modality. The (true) proposition that we should express if we said, in any ordinary context, "There is no million-carat diamond but there could have been one" is not the proposition that we should express if we said (in the modal metaphysics room), "There is a million-carat diamond in some universe that is not spatio-temporally or causally related to our universe." And, according to common opinion, this non-identity can be established independently of whether the latter proposition is true or false. Even if, as Lewis believes, the latter proposition is true, it is nevertheless a different proposition from the former. For more on this topic, see my essay, "Two Concepts of Possible Worlds". See also, Alvin Plantinga, "Two Concepts of Modality: Modal Realism and Modal Reductionism".

[23] It is not entirely clear to me whether the *mondes possibles* or *mundi possibiles* of Leibniz (the founder of the feast) were abstract or concrete. They—the non-actual ones, at any rate—seem to have been collections of mutually compossible "complete individual concepts" existing somehow in the mind of God. (The complete individual concept of Alexander the Great includes items of the sort "dining with Hephaestion in the early evening of March 11, 327 B.C."; thus, the complete individual concepts belonging to a given possible world must be not *only* be mutually compossible: Alexander's existence is not only compossible with Hephaestion's existence, but incompossible with his non-existence.) But are concepts existing in the mind of God abstract or concrete? We may well ask. In any case, Leibniz's possible worlds are in one respect a different sort of thing from the worlds of Lewis *and* the worlds of Kripke: as Leibniz uses the phrase, possible worlds are possible *creations*. God, for Leibniz, is not a part of the actual world (and no actually existing thing, God or creature, is a part of any non-actual world); God is rather the agent who (if I have this right) conferred actuality on a certain collection of mutually compossible complete individual concepts by creating for each concept in the collection a substance having exactly the properties contained in that concept.

One of the many important differences between Lewis's concretist modal ontology and abstractionist modal ontologies is that Lewis's ontology provides a reductive analysis of modality: Lewis "reduces" modal statements to statements involving nothing but spatio-temporal and mereological concepts and the apparatus of quantifier logic with identity and descriptions. Presentations of abstractionist modal ontologies, however, make use of "primitive" modal concepts. This would constitute a significant advantage for concretist modal ontologies over their abstractionist rivals *if* the concretist analysis of modal statements were correct. But, or so I maintain, it is not. As I once said,

> ...better no analysis than an incorrect one. The score in the reductive analysis game is thus 0 to –1 in favor of the Absractionist.[24]

In the remainder of this chapter, I will present and discuss at some length one abstractionist modal ontology.

**4.** There are (the promised modal ontology affirms) objects that I shall call 'possibilities'. Phrases formed by prefixing 'the possibility that' to a clause that is the "subjunctive transform" of a declarative sentence whose main verb is in the indicative mood represent themselves as denoting (or purporting to denote) possibilities: each of these phrases either denotes a possibility or denotes nothing (or denotes some "default referent" outside the intended domain of discourse—the number 0, perhaps). (Compare: 'the present king of France' represents itself as denoting or purporting to denote a monarch; either it denotes a monarch or it denotes nothing or it denotes some default referent.) Some examples of subjunctive transforms:

| Sentence | Its subjunctive transform |
|---|---|
| There are pigs that fly | there be pigs that fly |
| Napoleon was victorious at Waterloo | Napoleon have been victorious at Waterloo |
| Mars has two moons | Mars have two moons |
| 7 + 5 equals 12 | 7 + 5 equal 12. |

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[24] "Two Concepts of Possible Worlds," cited in note 22, p. 199.

(Thus, applying the "subjunctive transform" operation to a sentence changes the mood of its main verb, but does not change the person, voice, tense, or aspect of that verb.) The following phrases, then, represent themselves as denoting possibilities: 'the possibility that there be pigs that fly'; 'the possibility that Napoleon have been victorious at Waterloo'; 'the possibility that 7 + 5 equal 12', and the possibility that 7 + 5 equal 13.[25] Let us call such phrases 'canonical possibility names'[26]—with the understanding that in this expression 'name' means 'phrase that represents itself as naming something'. It is, I think, evident that a canonical possibility name, if it designates a certain object, designates that object "rigidly." That is, it cannot be true that, e.g., a certain object is the possibility that Napoleon have been victorious at Waterloo, but *it might have been* that some other object was the possibility that Napoleon have been victorious at Waterloo—as it *is* true that a certain object is the woman who was the British Prime Minister in 1990, although some other object might have been the woman who was the British Prime Minister in 1990.

And when *do* canonical possibility names denote possibilities? And how are possibilities to be individuated—if two canonical possibility names denote possibilities, when do they denote the *same* possibility?

Let us say that each possible proposition (each proposition that is possibly true) *specifies* a unique possibility: if the proposition that Napoleon was victorious at Waterloo is, as most of us would suppose, possibly true, it specifies a possibility: the possibility that Napoleon have been victorious at Waterloo (and no other), the proposition that 7 + 5 equals 12 specifies the possibility that 7 + 5 equal 12 (and no other) .... Thus,

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[25] My subjunctives are what George Orwell has called "American" subjunctives. The American subjunctive ('The judge ordered that the prisoner be released') is not quite the "classical" subjunctive ('The judge ordered that the prisoner should be released'). And both stand in stark contrast to what I believe is a fairly recent syntactical innovation I call "the British indicative" ('The judge ordered that the prisoner was released'). Most cases of the British indicative sound grammatically impossible to me—a reaction that will no doubt pass with my generation. (From a British television program: "I insisted that we went swimming"—meaning, roughly, 'I said, "We *must* go swimming"' as opposed to, 'I said, "We *did* go swimming."' *Really*? You can *say* that?) I do apologize to those to whom my 'be's and 'have been's sound precious or quaint (or even grammatically impossible). Phrases like 'the possibility that there are flying pigs' and 'the possibility that Napoleon was victorious at Waterloo' are certainly grammatically possible by anyone's lights, but a speaker of my antique dialect hears them as purporting to denote *epistemic* possibilities. For example, someone (someone spectacularly misinformed in matters both zoological and aerodynamical) might say, "The possibility that there are flying pigs hasn't been ruled out."

[26] 'The possibility that' is obviously a modal operator (although not a sentential modal operator like 'it is possibly true that'). Thus, terms that occur in canonical possibility names occur within modal contexts. There is no reason to forbid applications of existential generalization to terms that occur in canonical possibility names. (Thus: 'The possibility that Napoleon have been victorious at Waterloo exists, *hence* $\exists x$ the possibility that $x$ have been victorious at Waterloo exists'. But, as we know from the case of modal contexts created by the familiar sentential modal operators, such contexts require careful logical treatment: neither '$\forall x$ (if $x$ is Greek, the possibility that $x$ not be Greek exists), *hence* if the tallest Greek is Greek, the possibility that the tallest Greek not be Greek exists)' nor 'The possibility that the king of England in 1650 have been the eldest son of Elizabeth I exists, *hence* $\exists x$ the possibility that $x$ have been the eldest son of Elizabeth I exists' is a valid inference.

> For any declarative sentence whose main verb is in the indicative mood, *x*, if *y* is the subjunctive transform of *x*, then ⌜If the proposition that *x* is possibly true, it specifies the possibility that *y* (and specifies no other possibility)⌝ expresses a truth.

Let us say that the result of prefixing ‘the proposition that’ to a declarative sentence is a canonical proposition name. Then we stipulate:

> When canonical proposition names and canonical possibility names occur in a sentence, they are subject to existential generalization (in the absence of explicit “existential defeaters”[27]).

That is to say, the canonical names of propositions and possibilities are not what Quine has called “defective” nominal phrases—phrases like ‘the average American family’ or ‘Sally’s sake’ (as it occurs in sentences like ‘I did it for Sally’s sake’). So, for example, ‘$\exists x$ (the proposition that Socrates is mortal specifies $x$)’, ‘$\exists x$ ($x$ specifies the possibility that Socrates be mortal)’, and ‘$\exists x \exists y$ ($x$ specifies $y$)’ follow from ‘The proposition that Socrates is mortal specifies the possibility that Socrates be mortal’. We have said that every possible proposition specifies exactly one possibility. Let us further stipulate that every possibility is specified by some possible proposition. And let us say, finally, that any two possible propositions that are necessarily equivalent (that necessarily have the same truth-value) specify the same (unique) possibility. Thus, the proposition that my wife and I have owned three dachshunds specifies the possibility that my wife and I have owned three dachshunds; and the proposition (presumably a numerically distinct proposition[28]) that the number of dachshunds my wife and I have owned equals the least odd prime also specifies that possibility. And since the latter proposition specifies the possibility that the number of dachshunds my wife and I have owned equal the least odd prime, it follows that the possibility that my wife and I have owned three dachshunds is identical with the possibility that the number of dachshunds my wife and I have owned equal the least odd prime.

The individuation of possibilities is thus more “coarse-grained” than is the individuation of propositions: if *x* and *y* are possibilities, *x* is identical with *y* if and only if, for any proposition *z*, *z* specifies *x* if and only if *z* specifies *y*—that is to say, possibilities are identical if and only if they are specified by the same propositions.

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[27] For example, ‘$\exists x$ $x$ does not exist’ does not follow from ‘The possibility that 7 + 5 equal 13 does not exist’—nor, for that matter, does it follow even from the (presumably false) sentence ‘The possibility that Napoleon have been victorious at Waterloo does not exist’.

[28] Recall our principle of individuation for propositions (“saturated assertibles”) in Chapter III. If Timmy says, “Peter and his wife have owned three dachshunds,” and Tammy says, “The number of dachshunds Peter and his wife have owned equals the least odd prime,” then “presumably” Timmy and Tammy have not said the same thing—have not, as we say, said the same thing in different words.

We say that a possibility is *realized* if and only if some proposition that specifies it is true (or, equivalently, if and only if all the propositions that specify it are true). An alternative statement of the principle of individuation for possibilities is thus, '*x* is identical with *y* if and only if it is necessarily true that *x* is realized if and only if *y* is realized'. (When terms occur in modal contexts, the following constraint on universal instantiation is in order: universal instantiation to a nominal must be to a proper name or other "rigid designator"—such as a canonical possibility name. For example, it does not follow from our principle of individuation for possibilities that

> my favorite example of a possibility is the possibility that Napoleon have been victorious at Waterloo
>
> if and only if
>
> it is necessarily true that my favorite example of a possibility is realized if and only if the possibility that Napoleon have been victorious at Waterloo is realized

—and a good thing, too, for that would imply that my favorite example of a possibility is *not* the possibility that Napoleon have been victorious at Waterloo.)

Phrases like 'the possibility that Napoleon have been victorious at Waterloo' are very like definite descriptions even if they are not strictly speaking definite descriptions. (It is not entirely implausible to suppose that 'the possibility that Napoleon have been victorious at Waterloo' and 'the *x* such that *x* is a possibility and the proposition that Napoleon was victorious at Waterloo specifies *x*' mean more or less the same thing. One might wonder, however, whether it would be possible to understand 'the proposition that Napoleon was victorious at Waterloo specifies *x*' absent a prior understanding of 'the possibility that Napoleon have been victorious at Waterloo'.)

If a sentence *x* expresses an impossible proposition, and *y* is the subjunctive transform of *x*, then ⌜the possibility that *y*⌝ is without a referent, and one should treat sentences in which it occurs in whatever way one treats sentences in which, e.g., 'the present king of France' occurs. There is, for example, no such possibility as the possibility that 7 + 5 equal 13. This must be the case, owing to the fact that "every possibility is specified by some possible proposition: there are no possibilities but those specified by such possible propositions as there may be"—for if the possibility that 7 + 5 equal 13 exists, it is specified by and only by propositions that necessarily have the same truth-value as the proposition that 7 + 5 equals 13; and none of those propositions is possibly true. And it obviously follows from the principles laid down in the preceding paragraphs that if *x* and *y* are possibilities specified by necessarily true propositions, *x* and *y* are identical. Thus, the possibility that 7 + 5 equal 12 is identical with the possibility that there be no village one of whose residents is an adult male barber who shaves all and only the adult males resident in that village who do not shave themselves. If one were fond of a paradoxical mode of expression, one might call this possibility ‘the necessity’.

Some definitions:

$x$ is true in the possibility $y =_{df} x$ is a proposition, and, necessarily, if $y$ is realized, $x$ is true
$x$ exists in the possibility $y =_{df}$ necessarily, if $y$ is realized, $x$ exists
$x$ has the property $y$ in the possibility $z =_{df}$ necessarily, if $z$ is realized, $x$ has $y$[29]
The possibility $x$ includes the possibility $y =_{df}$ It is not possible for $x$ to be realized and $y$ unrealized
The possibility $x$ properly includes the possibility $y =_{df} x$ includes $y$ and $y$ does not include $x$
The possibility $x$ precludes the possibility $y =_{df}$ It is not possible for $x$ and $y$ both to be realized
$x$ is a possible world $=_{df} x$ is a possibility and for every possibility $y$, $x$ either includes or precludes y.

(Or, alternatively,

$x$ is a possible world $=_{df} x$ is a possibility and $x$ alone includes $x$)
$x$ is the actual world $=_{df} x$ is the possible world that is realized.

“But ‘actual’ and ‘realized’ are very close to being synonyms, so that last definition isn’t very . . . well, it isn’t very interesting. I’m sure you say something more informative about actuality than *that*. Why not adopt Lewis’s indexical theory of actuality? And, all right, I see that you can’t say, ‘The actual world is the world that includes the possibility that I exist’—at least not unless you were also willing to say, e.g., that if there is a woman who weighed exactly 71.11384 kg on the morning of her fiftieth birthday, then the possibility that no woman ever have weighed exactly 71.11384 kg on the morning of her fiftieth birthday precludes the possibility that you exist. But you could say that ‘the actual world’ means ‘*this* possible world’, couldn’t you? And wouldn’t that be a genuine *theory* of actuality? Wouldn’t it be a theory closely analogous to the popular indexical theory of

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[29] We shall also wish to be able to say things like ‘$x$ is green in (the possibility) $y$’. That sentence may be understood in this way: ‘$y$ is a possibility, and, necessarily, if $y$ is realized, $x$ is green’. But let us speak more generally. Say that a predicative phrase (I reserve the word ‘predicate’ for another use) is any expression such that the result of prefixing a noun-phrase to that expression is a subject-predicate sentence. Thus: ‘is green’, ‘is of the same color as this Granny Smith apple’, ‘is a bachelor’, ‘has a bad cold’, ‘cares for her aged father’ . . . . Then, for any terms $x$ and $y$ and any predicative phrase $z$, $\ulcorner xz \text{ in } y \urcorner$ means $\ulcorner y \text{ is a possibility, and, necessarily, if } y \text{ is realized, } xz \urcorner$.

'nowness' or 'presentness'—the theory that 'the present moment' means 'this moment?' "

My answer to these questions is a simple No. In my view, the indexical theory of actuality "works" only in the regime for which it was designed—a "concretist" modal ontology like Lewis's. Even if one thinks that there is only one "Lewis world"—the one Lewis calls 'the actual world' and which one perhaps prefers to call 'the universe'—it is reasonably clear what one means if one says, "There's only one Lewis world—*this* one." But a demonstrative pronoun cannot be used to refer to the realized possibility that no possibility properly includes. As I said many years ago,

> All of us who use the language of possible worlds occasionally speak of "this world," and no one seems to be much troubled by this phrase. But I am doubtful whether it has any very clear meaning. I am doubtful about this because I am doubtful about whether it is possible to make ostensive reference to the actual world (or to any world; but, presumably, if it is possible to make ostensive reference to any world, it is possible to make ostensive reference to the actual world). The problem is this: each of us exists in many worlds and, moreover, exists in many worlds epistemically indistinguishable from the actual world. (I shall not define 'epistemically indistinguishable', but clearly there is some sense in which some worlds that contain just one more elementary particle than the actual world does are "epistemically indistinguishable" from it.) Now if it is possible to make ostensive reference to the actual world, then there must be some sense in which the actual world is salient for us, some way in which it stands out. But how could it stand out among all those worlds from which it is *indistinguishable*?[30]

The analogy of the indexical theory of actuality with the indexical theory of "nowness" is, moreover, not only strained, but strained past the breaking point. I concede that we can use demonstrative pronouns to refer to extended intervals of time—although only up to a point. Statements like the following are obviously unproblematic: "Sea levels will rise significantly in *this century*"; "*This year* is the Year of the Rat"; "Give us *this day* our daily bread"; "Grant us wisdom, grant us courage, for the facing of *this hour*"; "Come to the dinner table *this minute*, young man!" . . . But we cannot use a demonstrative pronoun to refer to a particular millisecond—and *certainly* not to a particular "mathematical instant" of time. And using 'this possible world' in an attempt refer to a particular possible world would be like using 'this mathematical instant of time' in an attempt to refer to a particular mathematical instant of time: in both cases there are infinitely many "epistemically indistinguishable" candidates for the referent of the demonstrative phrase.

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[30] "Indexicality and Actuality," page 419. The reader is referred to this paper for a fuller discussion of the problems that face any attempt at an abstractionist appropriation of the indexical theory of actuality.

At this point, I will set aside my exposition of the modal ontology I am presenting, and say a few words about two topics that need to be mentioned at some point—this point being, I suppose, as good as any.

The first of the two topics is the question whether I am justified in calling certain possibilities—certain abstract objects—'possible *worlds*'. The thesis that the "possible worlds" that figure in Kripke's semantics for modal logic (or figure in its intended interpretation) really exist, that they're more than a useful fiction, is sometimes called "modal realism." Lewis calls his modal ontology Genuine Modal Realism, and he describes any modal ontology of the sort I call "abstractionist" as an "ersatz" modal realism, and calls the "possible worlds" of the abstractionists ersatz worlds—the idea being that calling an abstract object a 'world' is like calling oleomargarine 'butter' or calling paste 'diamonds': it's just not the real thing. In fact, however, calling something like a possible state of affairs or a possibility a 'world' is entirely in line with one of the meanings of the word. Plantinga's 'actual world', for example, is the actual state of affairs that includes all actual states of affairs. There is a remarkable anticipation of Plantinga's usage in chapter 9 ("World") of C. S. Lewis's *Studies in Words*.[31] (In the remainder of this paragraph, I will refer to C. S. Lewis as 'CSL' and to David Lewis as 'DKL'.) CSL divides the various meanings of the word 'world' into two main categories or families, which he calls *World A* and *World B*. And, comparing the most comprehensive senses of the word in each of the two families, he says,

> . . . just as *World B* is the Region which includes all other regions, so *World A* is the State of Affairs that includes all other states of affairs. (p. 222)

If we assume that by 'regions' CSL meant 'the regions you can get to from here', and that a "region" includes its content (that a region is not a mere *chôra* or receptacle), then "the Region which includes all other regions" is DKL's actual world. And if we assume that by 'states of affairs' CSL meant 'states of affairs that obtain', then "the State of Affairs which includes all other states of affairs" is Alvin Plantinga's actual world. DKL avails himself of the *B* sense of 'world' and Plantinga avails himself of the *A* sense. Neither the *A* sense nor the *B* sense is basic or fundamental.[32] DKL's dyslogistic terms 'ersatz modal realism' and 'ersatz world' are therefore inappropriate.

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[31] *Studies in Words* was published in 1960, eight years before "Counterpart Theory and Quantified Modal Logic" and eighteen years before *The Nature of Necessity*.

[32] Nor is the *A* sense somehow derived from or based on the *B* sense. The *A* family of senses is older than the *B* family: the word 'world' comes from Old Danish *waeraeld: 'were-old' or 'man-old' or* 'man-

The second of the two topics is the accessibility relation. A world $y$ is said to be "accessible" from a world $x$ just in the case that every proposition that is true in $y$ is possible in $x$. It is my firm conviction, however, that every proposition (and, indeed, every abstract object) exists of necessity—and that the "modal status" of a proposition ("necessity," "contingency," and so on) is essential to it. It follows that the accessibility relation is an equivalence relation and can therefore be safely ignored. (If the reader thinks that this constitutes a rather cavalier dismissal of a concept that is central to the study of quantified modal logic, I ask him or her to be patient; we shall return to the accessibility relation later in the chapter.)

Let us now return to our topic. The *definienda* of the two final items in the above sequence of definitions are two of the five "core open sentences" of "possible-worlds talk." *Definientia* for the other three[33]—'the proposition $x$ is true in the possible world $y$', '$x$ exists in the possible world $y$', '$x$ has the property $y$ in the possible world $z$'—have already in effect been given, for every possible world is a possibility. If we have the first of these sentences at our disposal, we may offer an alternative (and of course equivalent) definition of 'the actual world':

> $x$ is the actual world $=_{df}$ $x$ is a possible world and, for every proposition $y$, $y$ is true in $x$ if and only if $y$ is true.

And we are in a position to offer a familiar sequence of necessarily equivalent statements (we cannot call them definitions: the modal terms in their left-hand constituents occurred in definitions of 'possible world', 'true in', etc.). Let '$\Leftrightarrow$' represent necessary equivalence:

(The proposition) $x$ is necessarily true $\Leftrightarrow$ $x$ is true in every possible world
$x$ is necessarily false $\Leftrightarrow$ $x$ is true in no possible world
$x$ is possibly true $\Leftrightarrow$ $x$ is true in some possible world
$x$ is contingently true $\Leftrightarrow$ $x$ is true but not necessarily true
$x$ is contingently false $\Leftrightarrow$ $x$ is false but not necessarily false
$x$ is (a) contingent (proposition) $\Leftrightarrow$ $x$ is possibly true and not necessarily true
$x$ exists necessarily $\Leftrightarrow$ $x$ exists in every possible world

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age' (compare *werewolf*: 'man-wolf'). That is, a man's *waeraeld* is his life—in the biographer's rather than the biologist's sense of 'life'. The descendants of *waeraeld* eventually came to mean not just one man's life, but 'life'—what people so often reflect on the strangeness or the misery of, and whose constituent events historians write books about. And, in due course, 'world' came to have the meaning 'age' (as in 'ice age', 'the Middle Ages', 'the age of discovery'), for "ages" are the longish stretches of time to which historians' books are devoted. ('Before all worlds' in old translations of the Nicene Creed and 'world without end' in old translations of the *Gloria Patri* mean 'before all ages' and 'age without end'.) Eventually, 'world' came to be used to refer not only to the play (so to call it) but also to the stage on which the play was being performed—and the *B* sense was born.

[33] Three of the four "needed" open sentences listed in our discussion of Lewis's"s modal ontology in the previous section. As I did there, I will assume in the present discussion that "$x$ is false in $y$" is equivalent to "it is not the case that $x$ is true in $y$."

> $x$ exists contingently ⇔ It is not the case that $x$ exists necessarily
> $x$ has the property $y$ essentially ⇔ $x$ has $y$ in every possible world in which $x$ exists
> $x$ necessarily has the property $y$ ⇔ $x$ exists necessarily and has $y$ essentially
> $x$ has the property $y$ accidentally ⇔ $x$ has $y$ and $x$ does not have $y$ essentially.

We have, therefore, two modal idioms at our disposal: "modal predication" ('the proposition that $7 + 5 = 12$ is necessarily true') and "quantification over modal objects" ('the proposition that $7 + 5 = 12$ is true in every possible world'). Both are refinements of the modal idioms of ordinary speech—the quantificational idiom no less than the predicational idiom. And the quantificational idiom is extremely useful. Consider for example, the first paragraph of the Wikipedia article "Particle Decay":

> **Particle decay** is the spontaneous process of one unstable subatomic particle transforming into multiple other particles. The particles created in this process (the final state) must each be less massive than the original, although the total invariant mass of the system must be conserved. A particle is unstable if there is at least one allowed final state that it can decay into. Unstable particles will often have multiple ways of decaying, each with its own associated probability.

There is, moreover, a third modal idiom, "modal operators." (For example, 'It is necessarily true that between every integer greater than 1 and its double, there is a prime'; 'Every spider is essentially eight-legged if genetically normal and unmaimed'. Here the modal operator 'it is necessarily true that' takes a sentence and makes a sentence, and the modal operator 'essentially' takes a predicate and makes a predicate. And our symbol '⇔' is a modal operator that takes two sentences and makes a sentence.) Every statement that employs this idiom is equivalent to a statement that employs the predication idiom and therefore to a statement that employs the quantificational idiom. General principles about these equivalences, however, must be semantical statements. Three examples of such principles should suffice to make it clear what I mean:

> For any declarative sentence $x$ whose main verb is in the indicative mood ⌜It is necessarily true that $x$. ⇔ the proposition that $x$ is true in every possible world⌝ expresses a truth
> For any variable or rigid designator $x$ and any adjectival phrase or indefinite description $y$, ⌜$x$ is essentially $y$ ⇔ $x$ is $y$ in every possible world in which $x$ exists⌝ expresses a truth
> For any referring term $x$ and any adjectival phrase or indefinite description $y$ and any rigid designator $z$ that has the same referent as $x$, ⌜$x$ is essentially $y$ ↔ $z$ is $y$ in every possible world in which $z$ exists⌝ expresses a truth.

If we accept a few rather obvious semantical premises,[34] we can deduce

> It is necessarily true that between every integer greater than 1 and its double there is a prime $\Leftrightarrow$ the proposition that between every integer greater than 1 and its double, there is a prime is true in every possible world

from those premises and the first principle. And we can deduce

> $z$ is essentially a thinking thing $\Leftrightarrow$ $z$ is a thinking thing in every possible world in which $z$ exists[35]

from those premises and the second principle. And we can deduce

> The inventor of analytical geometry is essentially a thinking thing $\leftrightarrow$ Descartes is a thinking thing in every possible world in which Descartes exists

from those premises, the third principle, and 'Descartes = the inventor of analytical geometry'.

The ideology of modal logic is a refinement of the operator idiom. The ontology of the semantics of quantified modal logic rests on the ontology that one is committed to if one takes the existential implications of sentences in the quantificational idiom to be the straightforward and obvious ones.

5. The Interlocutor asks: "But are there really possibilities *in addition to* possible propositions?"

It is not necessary to suppose that there are. We can identify possibilities with certain possible propositions if we are willing to accept the "unrestricted conjunction principle for propositions": that for any $x$s, if those $x$s are propositions, there is a unique proposition that is the conjunction of the $x$s. The unrestricted conjunction principle (UCP) implies—for example—that there is a proposition that is the unique conjunction of the proposition that Socrates is Greek and the proposition that Plato is mortal—namely the proposition that Socrates is Greek and Plato is mortal. (I shall assume that the proposition that Socrates is Greek and Plato is mortal is identical with the proposition that Plato is mortal and Socrates is Greek.) Of course, infinitely many other propositions are necessarily equivalent to that proposition—for example,[36] the proposition that if Socrates is self-identical and Plato exists, then Socrates is both Greek and possibly non-snubnosed, and Plato is mortal if self-identical. But none of these other propositions is a conjunction of the proposition that Socrates is Greek and Plato is mortal. That is, for any $x$s and any $y$s, if the $x$s and the $y$s are propositions, at most one of the $y$s is a conjunction of the $x$s—and this is true even if each of the $y$s is equivalent to the others.

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[34] For example: "Between every integer greater than 1 and its double, there is a prime" is a declarative sentence whose main verb is in the indicative mood; If "$z$ is essentially a thinking thing $\Leftrightarrow$ $z$ is a thinking thing in every possible world in which $z$ exists" expresses a truth, then $z$ is essentially a thinking thing $\Leftrightarrow$ $z$ is a thinking thing in every possible world in which $z$ exists.

[35] Let us say that an open sentence expresses a truth just in the case that its universal closure expresses a truth—with the understanding that this convention does not license, e.g., the deduction of "$\exists x \forall x\ x$ is a bicycle" from "$\exists x\ x$ is a bicycle." See also note 29.

But what if there were only one of the $x$s? Call the arithmetical propositions that Kant used as examples "the Kantian sums." The proposition that $7 + 5 = 12$ is thus one of the Kantian sums. UCP implies that the Kantian sums have a unique conjunction. What is that conjunction if (as is the case, for all I know) the proposition that $7 + 5 = 12$ happens to be the only Kantian sum? There is nothing it *could* be but the proposition that $7 + 5 = 12$. Let us therefore say that any proposition $x$ is the conjunction of the propositions identical with $x$.[37] Then, if a "conjunction" is any proposition that, for some $x$s, is the conjunction of those $x$s, and if those $x$s are "conjuncts" of that proposition, then every proposition is a conjunction and is a conjunct of itself. Thus, the proposition that Socrates is Greek and Plato is mortal is the conjunction not only of the proposition that Socrates is Greek and the proposition that Plato is mortal; it is also the conjunction of the propositions identical with the proposition that Socrates is Greek and Plato is mortal. (Note that if the $x$s are the proposition that Socrates is Greek and the proposition that Plato is mortal, and the $y$s are the propositions identical with the proposition that Socrates is Greek and Plato is mortal, the $x$s are not identical with the $y$s—for the proposition that Socrates is Greek is one of the $x$s and is not one of the $y$s.) If, moreover, $x$ is the conjunction of $y$ and $z$ and $w$, it is also the conjunction of $y$ and the conjunction of $y$ and $z$. Thus, unless a proposition is itself its only conjunct, there will be $y$s and $z$s such that $x$ is the conjunction of the $y$s and $x$ is the conjunction of the $z$s and the $y$s are not identical with the $z$s. UCP implies that, for any propositions, there is *one* proposition that is their conjunction. It does not imply that it cannot be that some proposition is the conjunction of the $x$s *and* the conjunction of the $y$s (where the $x$s and the $y$s are not identical).[38]

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[36] The example is founded on two assumptions: that it is a necessary truth that Socrates is possibly non-snubnosed and that the accessibility relation is an equivalence relation.

[37] That is, for any proposition $x$, if the $y$s are propositions and for any $z$, $z$ is one of the $y$s if and only if $z = x$, then $x$ is the conjunction of the $y$s.

[38] Here is a complete list of the conjuncts of the proposition (P) that Socrates is Greek and Plato is mortal and Aristotle is a philosopher (assuming that, e.g., the proposition that Socrates is Greek and Plato is moral is identical with the proposition that Plato is mortal and Socrates is Greek): P itself, that Socrates is Greek, that Plato is mortal, that Aristotle is a philosopher, that Socrates is Greek and Plato is mortal, that Socrates is Greek and Aristotle is a philosopher, that Plato is mortal and Aristotle is a philosopher. P is the conjunction of those seven propositions and it is also the conjunction of, e.g., the proposition that Plato is mortal and Aristotle is a philosopher and the proposition that Socrates is Greek: if $x$ is the conjunction of the $y$s and the $z$s, it is also the conjunction of the $y$s and the conjunction of the $z$s.

"But why did you find it necessary to spend so much time on these finicking points about the conjunction operation?"

That's an excellent question, and it has an interesting answer. Note that one of the finicking points is that every proposition is a conjunct of itself. If instead of UCP I had introduced

> UCP′ For any *x*s, if those *x*s are propositions *and are two or more in number*, there is a unique proposition that is the conjunction of the *x*s,

there would be no reason to suppose that every proposition is a conjunct of itself.

"But why on earth do you *care* whether every proposition is a conjunct of itself?"

Well, suppose there are propositions that are not conjuncts of themselves. If there are any, there is obviously not just one. Therefore, UCP′ implies that there is a unique proposition that is the conjunction of the propositions that are not conjuncts of themselves. Call this proposition $\mathcal{N}$. Is $\mathcal{N}$ a conjunct of itself? If it is a conjunct of itself, it is one of the propositions that are not conjuncts of themselves, and therefore is not a conjunct of itself. If it is not a conjunct of itself, it is one of the propositions that are not conjuncts of themselves and hence is a conjunct of itself. And, therefore, by the theorem of sentential logic '$p \rightarrow {\sim}p. \ \& \sim(p) \rightarrow p : \rightarrow . \ p \ \& \sim p$', $\mathcal{N}$ is both a conjunct of itself and not a conjunct of itself.[39]

UCP does not have this unfortunate consequence. For if UCP is true (and if, as we have stipulated, every proposition is a conjunct of itself), there are no propositions that are not conjuncts of themselves—and $\mathcal{N}$ does not exist. (But the unfortunate consequences of the unrestricted comprehension principle for sets stand—for it is not the case that every set is a member of itself.)

If the unrestricted conjunction principle is correct, there is a unique proposition that is the conjunction of the "equivalents" of the proposition that Napoleon was victorious at Waterloo (that is, of the propositions necessarily equivalent to the proposition that Napoleon was victorious at Waterloo). And the possibility that Napoleon have been victorious at Waterloo could be identified with that proposition.[40] Generalizing:

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[39] Compare: Let the unrestricted comprehension principle for sets (UComP) be: For any *x*s, there is a set whose members are the *x*s ("S(*x*s)"). It follows from UComP that S (the sets that are not members of themselves) exists. Call it S. If S is a member of itself, it is one of the sets that are not members of themselves, and is therefore not a member of itself. If S is not a member of itself, it is not one of the sets that are not members of themselves, and hence is a member of itself. And, therefore, S is both a member of itself and not a member of itself.

[40] "Wouldn't it be simpler to identify worlds with equivalence classes of propositions (in the obvious way)?" Well, there would be cardinality difficulties—there wouldn't be, so to speak, *enough* classes for that to work. See the famous Appendix B of Russell's *The Principles of Mathematics*.

$x$ is a possibility $=_{df}$ for some possibly true proposition $y$, $x$ is the conjunction of the equivalents of $y$

The proposition $x$ specifies the possibility $y$ $=_{df}$ $x$ is a possible proposition, and $y$ is the conjunction of the equivalents of $x$

The possibility $x$ is realized $y$ $=_{df}$ $x$ is true

$x$ is true in the possibility $y$ $=_{df}$ $x$ is a proposition and $y$ is a possibility and $y$ entails $x$

$x$ exists in the possibility $y$ $=_{df}$ the proposition that $x$ exists is true in $y$

$x$ has the property $y$ in the possibility $z$ $=_{df}$ the proposition that $x$ has $y$ is true in $z$[41]

(In applying the definitions of '$x$ exists in $y$' and '$x$ has $y$ in $z$', one must recognize the fact that 'the proposition that" contexts—e.g., 'the proposition that $x$ has $y$'—are intensional contexts and take care to treat variables that occur in such contexts with the caution their semantical circumstances require. One must not, for example, regard the inference '$\forall x \forall y$ ($x = y \rightarrow$ the proposition that $x = y$ is a necessary truth) $\vdash$ Benjamin Franklin = the inventor of bifocals → the proposition that Benjamin Franklin = the inventor of bifocals is a necessary truth' as valid.)

We may now present three alternative—and equivalent—definitions of 'possible world'. We require the following preliminary definitions

$x$ is a world-proposition $=_{df}$ $x$ is a possible proposition, and, for every proposition $y$, $x$ entails either $y$ or the denial of $y$

The possibility $x$ includes the possibility $y$ $=_{df}$ $x$ entails $y$

The possibility $x$ properly includes the possibility $y$ $=_{df}$ $x$ includes $y$ and $y$ does not include $x$

The possibility $x$ precludes the possibility $y$ $=_{df}$ $x$ includes the negation of $y$.

The alternative definitions are:

$x$ is a possible world $=_{df}$ for some world-proposition $y$, $x$ is the conjunction of the equivalents of $y$

$x$ is a possible world $=_{df}$ $x$ is a possibility and for every possibility $y$, $x$ either includes or precludes y

$x$ is a possible world $=_{df}$ $x$ is a possibility and no possibility properly includes $x$.

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[41] We shall also wish to be able to say things like "$x$ is green in (the possibility) $y$." Say that a predicative phrase (I reserve the word "predicate" for another use) is any expression such that the result of prefixing a noun-phrase to that expression is a subject-predicate sentence. Thus: "is green," "is of the same color as this Granny Smith apple," "is a bachelor," "has a bad cold," "cares for her aged father"…. Then, for any variable $x$, any term $y$, and any predicative phrase $z$, $\ulcorner xz$ in $y\urcorner$ means $\ulcorner y$ is a possibility and $y$ entails the proposition that $xz\urcorner$.

And we have, finally,

$x$ is actual $=_{df}$ $x$ is a possible world and $x$ is realized.

There is no need to provide definitions of truth in a world, existence in a world, or the possession of a property in a world, since we have defined truth in a possibility, existence in a possibility, and the possession of a property in possibility.

I conclude that anyone who is uneasy about "postulating" or "appealing to" or "introducing" possibilities in our modal ontology need have no worries: the possibility specified by a given possible proposition can be regarded as the conjunction of the equivalents of that proposition.

**6.** The Interlocutor, however, however, has more to say:

"But why bother with possibilities at all? If we're allowed to say that possibilities (and therefore possible worlds) are, *au fond*, propositions, why not take advantage of this permission in a much simpler way—why not simply identify possible worlds with your 'world-propositions'? Why not replace the elaborate sequence of definitions at the end of your Section 5 with these?

$x$ is a possible world $=_{df}$ $x$ is a possible proposition, and, for every proposition $y$, $x$ entails either $y$ or the denial of $y$
$x$ is actual $=_{df}$ $x$ is true
$x$ is true in the world $y$ $=_{df}$ $x$ is a proposition and $y$ is a possible world and $y$ entails $x$
$x$ exists in the world $y$ $=_{df}$ the proposition that $x$ exists is true in $y$
$x$ has the property $y$ in the world $z$ $=_{df}$ the proposition that $x$ has $y$ is true in $z$."

Well, we *could* do that. Suppose we have. Say that two worlds have the same "actuality-value" if they are both actual or both non-actual. Unless necessarily equivalent propositions are identical, some worlds will *necessarily* have the same actuality-value: there will be distinct worlds $W_1$ and $W_2$ such that if either is actual, the other is, too.

Suppose, for example, that it is possible for there to be nothing (nothing concrete, that is) and that the proposition that there is nothing entails either the truth or the falsity of every proposition. Then the proposition that there is nothing (N) is a world-proposition—a possible world in the sense the Interlocutor has proposed. And the proposition that everything is a mathematician who has published a valid demonstration that Euclid's Parallel Postulate follows from Euclid's axioms and his other postulates (M) is also a "possible world"—a different one, for it can hardly be supposed that the proposition that there is nothing, and the proposition that everything is a mathematician (etc.) are the same proposition. And yet N and M are (necessarily) either both actual or both non-actual. If, for every possible world $x$ there is a world $y$ such that $x$ and $y$ are, of necessity, either both actual or both non-actual, then it cannot be the case that there is a unique actual world.[42]

If UCP is true, it is easily shown that if worlds are world-propositions, then many worlds are actual. For suppose that the proposition that Plato is moral and the proposition that Plato is mortal if self-identical—although they necessarily have the same truth-value—are distinct propositions. Suppose further that the *x*s are propositions such that

(i) The proposition that Plato is mortal and the proposition that Plato is mortal if self-identical are among the *x*s
(ii) The conjunction of the *x*s entails, for every proposition *y*, either *y* or the negation of *y*
(iii) The conjunction of the *x*s is true.

It follows from (ii) and (iii) that the conjunction of the *x*s is a world-proposition, and therefore a world (in the sense the Interlocutor has proposed) and that it is an actual world.

Now let the *z*s be the *x*s *other than* the proposition that Plato is mortal. Then the conjunction of the *z*s is a possible world that is actual and is distinct from the conjunction of the *x*s, for the proposition that Plato is mortal is a conjunct of the former, but not of the latter—although, of course, those two worlds are, of necessity, either both actual or both non-actual.)

Our identification of possible worlds with the most inclusive of the modally coarse-grained objects I have called 'possibilities' has one justification only: to ensure not only that there should be a unique actual world, to ensure not only that no two worlds should of necessity be either both actual or both non-actual, but to ensure that no two possible worlds should be so much as *compossible*—that is, to ensure that in no two worlds are exactly the same propositions true. And why would I take such pains to ensure that? Well, isn't that the way we usually think of and talk about possible worlds? Do not philosophers who make use of the idea simply assume that there is only one actual world—and that every non-actual world would have been the only actual world if it were actual? (And therefore assume that no two possible worlds are modally equivalent—no two possible worlds are of necessity such that either both are actual or both are non-actual.)

7. "But why do you assume that there are the possibilities you call possible worlds? Or let me put my question this way. Say that a possibility *x* is *comprehensive* just in the case that, for every proposition, either that proposition or its negation is true in *x*—or, equivalently, just in the case that no possibility properly includes *x*. Your 'possible worlds' are just exactly the comprehensive possibilities.

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[42] This was first noticed by Dr Kenny Boyce. See notes 48 and 49.

(And your 'actual world' is the one possibility among them that is realized.) Why do you suppose that there are comprehensive possibilities? Even given that there are objects of the kind you call possibilities, it doesn't obviously follow that any of them is comprehensive. It doesn't obviously follow that it's false that, for every possibility *x*, there is a distinct possibility that includes *x*."

I reply that, whether this obviously follows or not, there is a fairly plausible chain of reasoning that can take us from the existence of possibilities to the existence of *one* comprehensive possibility.

If there are possibilities, some of them are realized—those that are specified by true propositions. Let 'The Realized' be a rigid plural designator of the possibilities that are realized. And if there are possibilities, then, as we have said,

> For any declarative sentence whose main verb is in the indicative mood, *x*, if *y* is the subjunctive transform of *x*, then ⌜If the proposition that *x* is possibly true, it specifies the possibility that *y* (and specifies no other possibility)⌝ expresses a truth.

We thus have,

> If the proposition that the Realized are realized is possibly true, it specifies the possibility that the Realized be realized.

Since the proposition that the Realized are realized is a *true* proposition, the antecedent of this conditional is true, and the proposition that the Realized are realized therefore specifies the possibility that The Realized be realized. And since canonical possibility names are not defective nominals, the possibility that The Realized be realized exists. And the possibility that The Realized be realized ($\mathfrak{R}$) is a comprehensive possibility: for every proposition, either that proposition or its denial is true in $\mathfrak{R}$. (For any *x*, if *x* is a contingent proposition, if *x* is neither necessary nor impossible,

—if *x* is true, the possibility that *x* be true exists and is one of The Realized, and $\mathfrak{R}$ includes the possibility that *x* be true, and *x* is therefore true in $\mathfrak{R}$

—if the denial of *x* is true, the possibility that the denial of *x* be true is one of The Realized, and $\mathfrak{R}$ includes the possibility that the denial of *x* be true, and the denial of *x* is therefore true in $\mathfrak{R}$.

And, therefore, for every contingent proposition, either that proposition is true in $\mathfrak{R}$ or the denial of that proposition is true in $\mathfrak{R}$. Every proposition is either necessary or impossible or contingent. Any necessary proposition is true in every possibility and hence is true in $\mathfrak{R}$. Any impossible proposition is false in every possibility and hence is false in $\mathfrak{R}$. It follows that, for every proposition, either that proposition is true in $\mathfrak{R}$ or the denial of that proposition is true in $\mathfrak{R}$.)

There is, therefore, at least one of the objects I call "possible worlds"—the one that is "actual." That is, there is at least one comprehensive possibility, the one that is realized. But are there others? Are there comprehensive possibilities that are unrealized or non-actual? That there are does not follow from anything that has been said, nor does it follow that there are not. We need to say more about what worlds there are. I suggest this:

> Every possibility is included in some possible world.

(That is, every possibility is such that some world includes it.) Note that this principle is consistent both with Spinozism, the doctrine that there is only one possible world, and with the doctrine that there are many possible worlds. Spinozism entails that there is only one possibility (the necessity, as I have called it), and that sole possibility is a possible world, the actual world, the only possible world. And, since every possibility includes itself, every possibility is included in some possible world.

The suggested principle has this consequence: for any possibilities, the *x*s, if each of the *x*s precludes each of the others (for example, the possibility that there be flying pigs and the possibility that there be no living things and the possibility there be pigs none of which is capable of flight), there are at least as many possible worlds as there are *x*s. If all three of the possibilities cited in the parenthesis exist, that fact and the principle together entail that there are at least three possible worlds. (Spinozists, of course, will maintain that 'the possibility that there be flying pigs' and 'the possibility that there be no living things' are without referents.)

This principle guarantees that two philosophers who agree about what possibilities exist will agree about what possible worlds there are. I make bold to call it *the Principle of Plenitude for Possible Worlds* (*Plenitude*, for short). It might seem odd to call a principle a principle of plenitude for possible worlds when it is logically consistent with the proposition that there is only one possible world. Remember, however, that the primary sense of 'plenitude' is not "abundance" but—I quote several dictionary definitions—"the quality or state of being full: completeness"; "fullness or adequacy in quantity, measure, or degree"; "the state of being full or complete."[43] Abundance and completeness coincide only in those cases in which, well, in those cases in which completeness requires abundance, only in the case in which, absent an abundance of entities of some sort, some entities of that sort ought to have been present are missing. And, for the Spinozist, if your tally of possible worlds includes the one that is actual, it's complete.

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[43] From Late Latin *plenitudo*, *plenitudinis* fullness < *plenus,-a,-um*, full.

David Lewis has expressed the intuitive idea that requires the philosopher of modality to search out a principle of plenitude for worlds in these words: "... logical space is somehow complete. There are no gaps in logical space."[44]

("Logical space" is the space whose elements—whose "points"—are possible worlds.) And what would it be for there to be gaps in logical space? In my view, it would be for this to be the case:

> There is a possible proposition that is true in no possible world. If there is such a proposition, then the worlds "missing from logical space" are just exactly those worlds in which that possible proposition is true.[45]

And that is precisely what is ruled out by *Plenitude*.

"But wait! According to you, a possible proposition is *by definition* a proposition that is true in some possible world."

Yes, but that definition presupposed that logical space is not gappy. If we wish to raise the question whether logical space is gappy, we must "retreat" to the more basic definition (or definitional equivalence; it really isn't much of a definition), a proposition is possible just in the case that it is true in some possibility. We can then say that logical space is gappy if and only if there is a proposition that is true in some possibility but true in no comprehensive possibility.

Now I concede that the argument I have given for the existence of the actual world falls short of being a proof or demonstration of its conclusion. (A feature it shares with the cosmological argument, the private-language argument, the Quine-Putnam indispensability argument, and the consequence argument, and with most if not all philosophical arguments that are of any interest.) And I have given no argument at all for *Plenitude*. (It is extraordinarily hard to believe there are unrealized possibilities *and* that the actual world is nevertheless the only possible world—that is, extraordinarily hard to believe both that there are unrealized possibilities but no unrealized comprehensive possibilities. But if unrealized comprehensive possibilities exist, it does not follow that *Plenitude* is true.) For all I have said, therefore, it may be that (although there are possibilities) there are no possible worlds. Or it may that the actual world is the only possible world—and not because truth, possibility, and necessity coincide, but because logical space is gappy. (If there are no possible worlds at all, logical space is the null space, the space without elements—a space that is, as we might say, "maximally gappy.")

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[44] *On the Plurality of Worlds*, p. 86.

[45] Or, since, *ex hypothesi*, there are no such worlds, perhaps we should speak with a little more semantical caution. (The woman who proved Goldbach's Conjecture can't be "missing from" the list of great mathematicians if no one has proved Goldbach's Conjecture.) Suppose (for the sake of having an example) that the proposition that Napoleon was victorious at Waterloo is possible but true in no possible world. Then "the worlds in which the proposition that Napoleon was victorious at Waterloo is true" is missing from the list of plural referring expressions that refer plurally to possible worlds—it *should* be an item in that list and it isn't.

It is therefore important to note that a modal ontology that includes possibilities does not really require the existence of *comprehensive* possibilities. The list of pairs of equivalent statements in Section 4 can be replaced with the following list:

(The proposition) $x$ is necessarily true $\Leftrightarrow$ $x$ is true in every possibility  
$x$ is necessarily false $\Leftrightarrow$ $x$ is true in no possibility  
$x$ is possibly true $\Leftrightarrow$ $x$ is true in some possibility  
$x$ is contingently true $\Leftrightarrow$ $x$ is true but not necessarily true  
$x$ is contingently false $\Leftrightarrow$ $x$ is false but not necessarily false  
$x$ is (a) contingent (proposition) $\Leftrightarrow$ $x$ is possibly true and not necessarily true  
$x$ exists necessarily $\Leftrightarrow$ $x$ exists in every possibility  
$x$ exists contingently $\Leftrightarrow$ It is not the case that $x$ exists necessarily  
$x$ has the property $y$ essentially $\Leftrightarrow$ $x$ has $y$ in every possibility in which $x$ exists  
$x$ necessarily has the property $y$ $\Leftrightarrow$ $x$ exists necessarily and has $y$ essentially  
$x$ has the property $y$ accidentally $\Leftrightarrow$ $x$ has $y$ and $x$ does not have $y$ essentially.

A moment's reflection will reveal that we do not need even our coarse-grained "possibilities" to provide such a list of equivalencies, for they could be rewritten so as to appeal only to fine-grained "propositions." We can choose any modal term we as our "modal primitive"—'possible', 'entails', 'inconsistent'... For example:

$x$ is necessarily true $\Leftrightarrow \forall y$ ($x$ is inconsistent with $y \rightarrow \forall z$ ($y$ is inconsistent with $z$))  
$x$ is necessarily false $\Leftrightarrow \forall y$ $x$ is inconsistent with $y$  
$x$ is possibly true $\Leftrightarrow \exists y \sim x$ is inconsistent with $y$.

⋮

We may therefore use the apparatus of possible worlds without worrying ourselves greatly about whether there really *are* any—really are any *comprehensive* possibilities. We need not be made uneasy about the fact that there is no fully convincing demonstration that, given that there are such objects as possibilities at all, some among them are comprehensive. For a workable modal ontology does not really need them, and anyone who accepts the existence of possibilities but is uncertain about whether there are comprehensive possibilities (or, for that matter, anyone who denies that there are comprehensive possibilities) is free to regard them as heuristically useful fictions—or to ignore them altogether.

**8.** Essentially the same point applies to any other "abstractionist" modal ontology—that is, to any modal ontology that is not a variant on Lewis's "concretist" ontology. (Assuming, once more, that Meinongianism has been ruled out.) It applies, for example, to Plantinga's modal ontology. I have treated "possible worlds" as possibilities of a certain kind, and I have said that if there are no possibilities of that kind, it doesn't much matter—not so long as there are possibilities. Plantinga treats possible worlds as possible states of affairs of a certain kind. And he could (although he does not) say this: If there are no possible states of affairs of that kind, it doesn't much matter—not so long as there are possible states of affairs.

The modal ontology I have presented is, in fact, very much like Plantinga's—very much like the ontology set out in his *The Nature of Necessity*.[46] Plantinga's possible worlds are, as I have said, possible states of affairs of a certain kind. They are, he tells us, possible *maximal* states of affairs, a maximal state of affairs being a state of affairs *x* such that, for every state of affairs *y*, *x* either includes *y* or precludes *y*. (His definitions of the inclusion and preclusion relations among states of affairs parallel exactly my definitions of the inclusion and preclusion relations among possibilities. I have in fact borrowed the terms 'include' and 'preclude' from him.) To say that a state of affairs is actual is, for Plantinga, to say that it obtains. The actual world, therefore, is the maximal possible state of affairs that obtains.

Or so Plantinga says. But *is* there exactly one maximal possible state of affairs that obtains? Are there in fact any maximal possible states of affairs at all? Plantinga addresses these questions in the following brief passage in chapter IV of *The Nature of Necessity*:

> Obviously, *at least* one possible world obtains. Equally obviously, *at most* one possible world obtains; for suppose two worlds *W* and *W** both obtained. Since *W* and *W** are distinct worlds, there will be some state of affairs *S* such that *W* includes *S* and *W** precludes *S*. But then if both *W* and *W** are actual, *S* both obtains and does not obtain; and this, as they say, is repugnant to the intellect.
>
> (p. 45)

But *why* should one regard it as evident that at least one possible world obtains? Why should one even regard it as evident that there are any possible worlds at all? Given that there are possible states of affairs, why should one regard it as evident that some among them are maximal? Or put the question this way. Say that a state of affairs *x* is properly included in a state of affairs *y* just in the case that *y* includes *x*, and *x* does not include *y*. How do we know that it is not the case that *every* possible state of affairs is properly included in some possible state of affairs? (For a maximal possible state of affairs is precisely a possible state of affairs that is properly included in no possible state of affairs.) How do we know that some possible state of affairs is such that any of the "ladders of proper inclusion" at whose foot it stands has a highest rung?

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[46] See particularly chapter IV.

I have presented an argument for the conclusion that, if there are entities of the kind I call possibilities, at least one of them is a comprehensive possibility—to wit, the one that is realized. This argument could no doubt be modified to produce an argument (equally good or equally bad) for the conclusion that, if there are entities of the kind Plantinga calls possible states of affairs, at least one of them is a maximal possible state of affairs that obtains.

But would it be *the one* that obtains? Is it evident that, if there are maximal possible states of affairs, *at most* one of them obtains? The answer to this question depends on how states of affairs are individuated. It depends on whether the individuation of states of affairs is fine-grained (as the individuation of propositions is most plausibly supposed to be) or coarse-grained (like the individuation of my "possibilities").

It is natural to suppose that if there are such things as states of affairs, then for every state of affairs there is a corresponding proposition, and for every proposition there is a corresponding state of affairs—that very state of affairs to which it, the proposition, corresponds. It is natural to suppose, that is, that every state of affairs belongs, and every proposition belongs, to a "matching pair" like these: {its being the case that Socrates is mortal, the proposition that Socrates is mortal}, {its being the case that 7 + 5 = 12, the proposition that 7 + 5 = 12}, {its being the case that arsenic is nutritious, the proposition that arsenic is nutritious} . . . And it seems natural to say that states of affairs should be individuated as their corresponding propositions are individuated.[47] But, as we have seen, there are distinct propositions that necessarily have the same truth-value. And not only are there such pairs of propositions but *no* proposition *x* is the *only* proposition that is modally equivalent to *x*. For take any proposition you like—as long as it is not the proposition that Stationary Set Reflection implies the Singular Cardinals Hypothesis. Take, for example the proposition that carbon has a nuclear resonance in the neighborhood of 7.7 MeV. The propositions

4. Carbon has a nuclear resonance in the neighborhood of 7.7 MeV

and

5. Carbon has a nuclear resonance in the neighborhood of 7.7 MeV and Stationary Set Reflection implies the Singular Cardinals Hypothesis

are modally equivalent but numerically distinct. (For—surely?—the following two general theses are true:

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[47] I myself find this idea so natural that in my own ontology I simply *identify* each state of affairs with its corresponding proposition. (And I identify facts with true propositions.)

> For any $x$, $y$, and $z$, if $x$ is the name of a person and $y$ and $z$ are declarative sentences, then, if $y$ and $z$ express the same proposition, then ⌜If $x$ has asserted that $y$, then $x$ has asserted that $z$⌝ expresses a true proposition.

> For any $x$, $y$, and $z$, if $x$ is the name of a person and $y$ and $z$ are declarative sentences, then ⌜If $x$ has asserted that $y$ and $z$, then $x$ has asserted that $z$⌝ expresses a true proposition.

And if they are indeed true, then if Fred Hoyle asserted that carbon has a nuclear resonance in the neighborhood of 7.7 MeV, he asserted that Stationary Set Reflection implies the Singular Cardinals Hypothesis. But that great astronomer in fact did assert that carbon has a nuclear resonance in the neighborhood of 7.7 MeV, and he did not assert that Stationary Set Reflection implies the Singular Cardinals Hypothesis—for only someone at home in the most remote and abstruse outlying districts of set theory is able so much as to *grasp* that proposition, which was, in any case, proved only after Hoyle's death.)

Now according to Plantinga, the actual world is the state of affairs that includes all and only those states of affairs that obtain. But if the states of affairs $x$ and $y$ are identical if and only if the proposition with which $x$ is paired and the proposition with which $y$ is paired are identical, the condition 'is a state of affairs that includes all and only those states of affairs that obtain' is not uniquely satisfied: there are at least two "actual worlds." For suppose there is exactly one actual world. Let us give it (as Plantinga so often did) the proper name '$\alpha$'. Consider the state of affairs

> Its being the case that $\alpha$ obtains.

This state of affairs is modally equivalent to $\alpha$, and it is either identical with $\alpha$ or it is not. If it is not, then there is a state of affairs includes and precludes the same states of affairs as $\alpha$ and is not the same state of affairs as $\alpha$. That is, at least two worlds are actual—which contradicts our assumption that there is exactly one actual world. Suppose, then, that

> $\alpha$ = its being the case that $\alpha$ obtains.

One or the other of the following two states of affairs is modally equivalent to its being the case that $\alpha$ obtains:

6. Its being the case that $\alpha$ obtains and Goldbach's conjecture is true.
7. Its being the case that $\alpha$ obtains and Goldbach's conjecture is false.

If Goldbach's conjecture is true, it is (6) that has this property, and if the states of affairs $x$ and $y$ are identical if and only if the proposition with which $x$ is paired and the proposition with which $y$ is paired are identical, and if

> Its being the case that α obtains

and

> Its being the case that α obtains and Goldbach's conjecture is true

are the same state of affairs, the proposition that α obtains and the proposition that α obtains and Goldbach's conjecture is true are the same proposition. It follows (by an argument parallel to the above "Carbon resonance-Singular Cardinals" argument), that anyone who asserts that α obtains also asserts that Goldbach's conjecture is true. And, of course, if Goldbach's conjecture is false, then anyone who asserts that α obtains also asserts that Goldbach's conjecture is false—and it is obviously false that anyone who asserts that α obtains also either asserts that Goldbach's conjecture is true or asserts that Goldbach's conjecture is false. Therefore, either (6) or (7) is a maximal possible state of affairs that obtains that is not identical with its being the case that α. And, since α is (we are assuming) identical with its being the case that α obtains, there is a possible world other than α that is actual—which contradicts our assumption that α is the only world that is actual. And therefore:

> If for any states of affairs *x* and *y*, *x* and *y* are identical if and only if the proposition with which *x* is paired and the proposition with which *y* is paired are identical, then (given that at least one possible world is actual), more than one possible world is actual.[48]

I concede that Plantinga has not explicitly affirmed the antecedent of this conditional—but he has explicitly refrained from rejecting it. He has said (*loc. cit.*),

> It is clear that a proposition like
> (1) Socrates is snubnosed
> is intimately related to a state of affairs like
> (2) Socrates' being snubnosed.
> Roderick Chisholm, indeed, thinks the relation so intimate as to constitute identity... Perhaps he is right. Without entering that question, we may note that [necessarily (1) is true if and only if (2) obtains].[49]

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[48] The fact that Plantinga's definitions do not secure the existence of a unique actual world was first pointed out to me by Dr Kenny Boyce. (But see the note that follows.)

[49] Plantinga's essay, "Two Concepts of Modality: Modal Realism and Modal Reductionism" contains the statement (p. 195), "... there is one possible world which includes every actual state of affairs; this is the actual world...." A footnote to this statement reads, "Given a proposition (or state of affairs) **P**, there will typically be several distinct propositions (or states of affairs) equivalent to it; in the

And, obviously, if a state of affairs is identical with the proposition with which it is paired, then, for any states of affairs *x* and *y*, *x* and *y* are identical if and only if the proposition with which *x* is paired and the proposition with which *y* is paired are identical. What Plantinga must do, if he wishes to maintain that there is only one actual world (and, more generally, that no possible world includes any other possible world) is explicitly to reject the identity of a state of affairs with its paired proposition, and to reject as well the weaker statement that *x* and *y* are the same state of affairs if and only if the proposition that *x* is paired with is the proposition that *y* is paired with. He must say, rather, that *x* and *y* are the same state of affairs if and only if each includes the other. (Each of the states of affairs Socrates' being snubnosed and its being the case that 198,733 is a prime number only if Socrates is snubnosed includes the other. And, of course, if those "two" states of affairs are identical, they are paired with *the same propositions*. It is, however, false that they are paired with *the same proposition*, for each is paired with no proposition at all—which of course entails that they are paired with the same propositions. For if the former is paired with any proposition, it is paired with and only with the proposition that Socrates is snubnosed, and if the latter is paired with any proposition, it is paired with and only with the proposition that 198,733 is a prime number only if Socrates is snubnosed. And those are two distinct propositions.)

**9.** We have so far discussed the items in a modal ontology that are commonly called 'possible worlds'. And we have said what it is for a given object to exist in a given possible world. But what of those objects that exist *only* in worlds that are non-actual?

In Chapter I, I defended the following two theses: that both 'there are' and 'exists' are univocal; that (making proper allowance for their different syntactical properties) the one meaning either has is the one meaning the other has. It follows that it cannot possibly be true that there are things that do not exist. And I presented the following challenge to those philosophers who maintain that there are things that do not exist,

> If you think that there are things that do not exist, give me an example of one.

And, having issued that challenge, I continued with the words,

> The right response to your example will be either, "That does too exist," or "There is no such thing as that." (p. 10)

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interests of brevity, I ignore the question whether this also holds for possible worlds." I thank Kenny Boyce (see the previous note) for having unearthed and having called my attention to this obscure but important passage.

In Chapter II, I considered seven possible responses to that challenge. The sixth possible response was, "those objects that exist only in non-actual worlds." My conclusion was that there are no such objects—for, after all, a thing that exists in some possible worlds but does not exist in the actual world is a thing that might exist but doesn't exist. Unless one is willing to accept a logic that does not number '$\forall x$ ($Fx$ & $Gx. \rightarrow Gx$)' among its theorems, one had better say that objects that might have existed but do not exist do not exist. And, therefore, if one grants that 'exist' and 'there are' both mean one thing and it is the same thing, one must conclude that there are no objects that might have existed but do not. But, of course, that is precisely what those philosophers who believe that there are things that exist in certain merely possible worlds but do not exist in the actual world will not grant. They will insist that there is a kind of existential quantifier whose domain of quantification includes things that might exist but do not *actually* exist—items that are variously called "merely possible objects," "non-actual objects," and "(mere) *possibilia*." They commonly term themselves "possibilists" and they call philosophers who take my position "actualists." Actualists like myself, the possibilists contend, have confused existence, which comprises both actual and merely possible existence, with *actual* existence. Actualists, moreover, have wrongly insisted that the domain of the abstract existential quantifier of formal logic is restricted to actual objects.

The following is a typical possibilist diagnosis of the flaws of actualism (addressed to me).

> We possibilists are perfectly willing to grant that the existential quantifier has only one sense. But you have that sense wrong. '$\exists x$' means 'for some $x$', and not, as you evidently suppose, 'for some actual $x$'. No doubt your mistake is to be explained by the fact that in many contexts, we restrict the domain of our quantifiers to actual objects. But not in all contexts. Imagine, for example, that the year is 1659. We observe Velázquez in his studio. He has painted four mythological canvases. He is about to paint a fifth. He's been paid a handsome commission in advance of the work, he is standing before his easel brush in hand, and he has a clear picture in his mind of the finished work. But, suddenly, just as he is about to put brush to canvass, he dies of a stroke. Then there is a painting by Velázquez that might have existed but does not actually exist. Or consider *you*, van Inwagen. You have developed from a zygote which was produced by the union of a particular egg and a particular spermatozoon. Suppose some other sperm had fertilized that egg. (There were a lot of runners in that race!) Then your mother would not have given birth to you in September of 1942, but to someone else. And that 'someone else' is a possible person who does not actually exist.

The topic of the present section is this possibilism. The late Derek Parfit was a particularly acute and committed possibilist. His defense of possibilism is presented in Appendix J ("On What There Is") to his *On What Matters*.[50] Before *On What Matters* was published, Parfit sent me a draft of Appendix J for my comments. (The published version of Appendix J differs in many important ways from the draft.) I responded at length, and my considered opinion is that my responses represent my best effort to explain why I find possibilism an unacceptable position. The quotations from Parfit what follows are from the draft, not from the published book—simply because that is the text to which the response that follows is addressed. It is not my intention that these comments on Parfit's draft should be read as an attempt at a refutation of his possibilism. (If that were my project, I should, of course, address my remarks to the published text.) It is rather that I am convinced that to record my reactions to various passages in the draft is the best way for me to make clear my own views on, and my reasons for rejecting, possibilism. (The reader is, of course, invited to compare the quotations from the draft of Appendix J with the corresponding sections of the published Appendix. His comments in the published Appendix on the meaning of the adverb 'actually' are particularly important.)

In the draft, Parfit wrote,

> Rather than being *Actualists*, who believe
>
> > There is nothing except what actually exists,
>
> we ought, I have claimed, to be *Possibilists*, who believe
>
> > There are some things that are merely possible.
>
> I shall here defend *the Plural Senses View*: There is one *wide* sense in which we can claim that there are certain things, or that such things exist. Many entities can also be claimed to exist in other, narrower senses. Something exists in the *actualist* sense, for example, if this thing actually exists.
>
> As Possibilists, we should claim:
>
> > There *are* in the wide sense certain things that do not actually exist.
>
> Some Actualists claim:
>
> > Nothing actually exists except what actually exists.
>
> But Possibilists would accept this trivial claim. For Actualism to be a significant view, Actualists must claim
>
> > Nothing exists in any sense except what actually exists.

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[50] Appendix J is printed at the end of the second volume.

> Some Actualists would reject the Plural Senses View. These people assume *the Single Sense View*: The words 'there are' and 'exist' must always be used in the same single sense.

A bit further on in the draft, commenting on Quine's statement,

> There are philosophers who stoutly maintain that 'exists' said of numbers, classes, and the like and 'exists' said of material objects are two uses of an ambiguous term 'exists'. What mainly baffles me is the stoutness of their maintenance. What can they possibly count as evidence? Why not view ['exists'] as unambiguous but very general... ?[51]

Parfit wrote,

> If there could be no evidence *for* the view that 'exists' can have two senses, there could be no evidence *against* this view, and Quine should also be baffled by the stoutness with which some people reject the Plural Senses View. As Quine might have written: 'Why not view 'exists' as being ambiguous, by having one general sense and other more particular senses?'[52] There can, however, be evidence for the Plural Senses View. For example, we might say:
>
> (A) Though there are three possible buildings that Palladio designed for this part of the city, only one of these buildings was ever built and actually exists.
>
> This sentence uses the phrase 'there are' in what I have called the wide sense, and uses the word 'exists' in the actualist sense. We might similarly claim
>
> (B) When we are deciding what to do, there are often different possible acts between which we must choose. Since only one of these acts will be actual, the other acts are merely possible.

I reproduce here my comments on these two passages of Parfit's:

> No one, I'm sure, would deny that the *sentence* 'Though there are three possible buildings that Palladio designed for this part of the city, only one of these buildings was ever built and actually exists' could be used to say something true. (Although most people—I'm once more sure—would regard 'Palladio designed three buildings for this part of the city, but only one of them was ever built' as a more natural way of stating this true thing.) That is, the sentence can certainly be used to express a true proposition, but it's not evident that there's just one proposition it might be used to express. I think that there is more than one

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[51] W.V. Quine, *Word and Object*, p. 131.

[52] I examine the plural senses view in "Modes of Being and Quantification".

proposition that it might be used to express, and that at least one of these propositions is true and that at least one of them is false—in fact, necessarily false.

Here's one of the true ones. (I'm not sure how to individuate propositions. Perhaps the elaborate sentence that follows this parenthesis doesn't really express any of the propositions that might be expressed by 'Though there are three possible buildings that Palladio designed for this part of the city, only one of these buildings was ever built and actually exists'. But I do say that it's very intimately related to a proposition that that sentence might be used to express. In my view, the sentence 'Though there are three possible buildings that Palladio designed for this part of the city, only one of these buildings was ever built and actually exists'—taken in one of its possible senses—and the long sentence that follows this parenthesis are related in a way comparable to the way in which 'The stones are arranged in a circle' and 'The stones are five or more in number and they lie in a plane and for any *x* and *y* among them the distance between *x* and any of its nearest neighbors and the distance between *y* and any of its nearest neighbors are approximately the same, and there is a point on the plane on which they lie such that all the stones are at the same distance from that point' are related.)

> Palladio drew up three sets of architectural plans; each set of plans satisfied the following conditions: if something had been constructed according to it, that thing would have been a building; any two of the plans *x* and *y* were such that a building constructed according to *x* and a building constructed according to *y* would have had noticeably different architectural features; it was his intention that any building constructed according to any of these sets of plans have been in this part of the city; exactly one building has been constructed according to any of these sets of plans.

And here's one of the false ones—one of the necessarily false ones:

> Consider these two properties
> —is a building
> —was designed for by Palladio for this part of the city;
> there are three things that have both properties; two of them do not exist but might exist; one of them does exist.

My reason for saying that this proposition is false is twofold. Or let's say that my reasons for saying this can be presented in the form of two arguments for its falsity. Here's the first: it implies that something satisfies the open sentence

> it is not the case that *x* exists & it is possibly the case that *x* exists

And anything that satisfies that sentence satisfies its first conjunct. And nothing could satisfy its first conjunct—since 'it is not the case that *x* exists' is equivalent to 'it is not the case that there is a *y* such that *y* is identical with *x*'. And the existential closure of that sentence ('There is an *x* such that it is not the case that there is a *y* such that *y* is identical with *x*') is the denial of a theorem of standard quantifier logic.

The other argument is this. The second proposition implies that three things belong to the extension of both the properties it cites. But all you have to do is go round the city (Vicenza?) and count the buildings designed by Palladio, and you'll see that there's only one thing that belongs to the extension of both properties. Examine every region of space-time—use a wormhole opener supplied by the obliging God of the philosophers—and you'll discover only one object that is both a building and was designed by Palladio for this part of the city. (And, of course, it's essential to the concept of a building that any building occupy some region of space-time.)

Well, these arguments will be excruciatingly familiar to you—as excruciatingly familiar as your replies to them will be to me.

Commenting on the first argument, you will tell me that my argument wrongly identifies 'exists' and 'actually exists' (and wrongly identifies 'there is an *x*' and 'there is actually an *x*'.) And, commenting on the second argument, you will tell me that I am identifying 'there are *n* objects in the extension of F' with 'there are *n* actual objects in the extension of F'.

And, of course, I'm going to tell you—with perfect sincerity: this is not a *ploy*—that I don't understand your reply to my argument. And I mean something rather strong by that: your reply makes no sense whatever to me. It simply bewilders me. Following my Master (in matters of the philosophy of logic), I'll attempt to "evoke the appropriate sense of bewilderment."

I'll start with the adverb 'actually' and consider the adjective 'actual' presently. (I am convinced that the adverb is the more basic or fundamental of the two words. But that conviction of mine will not figure in the argument that follows.)

It seems to me that the uses of 'actually' are of two kinds. One belongs to rhetoric rather than to logic (or to pragmatics rather than to semantics), and the other has a rather recondite semantical function.

Here's the recondite one: 'actually' can function as a "rigidifier" like Kaplan's 'dthat'. (As, for example, in 'My yacht might have been longer than it actually is'. The idea is (a) that this sentence is equivalent to 'My yacht might have had a length that is greater than the length my yacht actually has' and (b) that 'the length my yacht actually has' is a rigid designator of the length my yacht in fact happens to have.) I won't discuss this use, which doesn't seem to be relevant to the question whether I'm identifying existing/being (full stop) and actually existing / actually being. At any rate, if this use has some relevance to that question, I don't see it. (There's another account of this use of 'actually'. Some see the word as a scope-determiner: ‘My yacht might have been longer than it actually is’ is equivalent to ‘Consider the length of my yacht; my yacht might have had a length greater than *that* length’. I don’t suppose that it makes much difference for our present purposes which of these accounts of this use of ‘actually’ is correct.)

The more usual use of ‘actually’ is illustrated by the correct form in the services for informing a superior that he (if it’s a he) is mistaken about something: ‘Actually, sir, that turns out not to be the case’. Notice that there’s no philosophically important difference between, ‘Actually, that turns out not to be the case’ and ‘That turns out not to be the case’. There is indeed a rhetorical or pragmatic difference, but there is no logical or semantical difference. The junior officer is, or so my ear tells me, “conversationally implicating” that, although “that” is indeed not the case, that “that” was the case would have been the natural and reasonable thing for anyone who wasn’t better informed about the details of the matter under consideration than anyone could reasonably be expected to be. In this context, ‘actually’ means something close to ‘oddly enough’. Similarly, ‘It’s actually raining’ is equivalent to ‘It’s raining’ and ‘Aristotle was actually a philosopher’ is logically or semantically equivalent to ‘Aristotle was a philosopher’. And ‘The Taj Mahal actually exists’ is equivalent to ‘The Taj Mahal exists’. The rhetorical function of ‘actually’ is generally to signal the speaker’s intention to correct a misapprehension—although this use of ‘actually’ does not necessarily (as in the “superior officer” case) “implicate” that the misapprehension of the person addressed by no means reflects badly on that person. One would probably address sentences like ‘It’s actually raining’ and ‘Aristotle was actually a philosopher’ and ‘The Taj Mahal actually exists’ to someone who had a false belief—that it was a fine day; that Aristotle was a Greek poet; that the Taj Mahal was a legendary structure.

Now what about the adjective; what about ‘actual’? In my view, the adjective ‘actual’ is always equivalent to ‘actually F’ for some F that depends on the nature of the object to which ‘actual’ is applied. And since, as we have seen, ‘actually’ is semantically redundant (if it is not a rigidifier or scope-determiner), this same thesis could be put this way: the meaning of ‘actual’ depends on the type of object to which it is applied. The actual *world*, for example, is the world that actually *obtains* (at least if with Plantinga we identify worlds with certain states of affairs—maximal possible states of affairs). Obtaining is a thing that some states of affairs do. A possible world, a certain kind of state of affairs, is actual if it actually does this thing and non-actual if it doesn’t actually do this thing. Or, owing to the semantical redundancy of ‘actually’: a state of affairs is actual and only if it obtains and non-actual if and only if it doesn’t obtain.

An actual building, on the other hand, is a building that is actually—*what*? Well, I think, a building that is actually existent or actually exists. Note that this is not what ‘actual’ means when it is applied to worlds—I mean to possible worlds in the modal logician’s sense. All the indenumerably many worlds in which

Napoleon was victorious at Waterloo (actually) *exist*, but none of them (actually) *obtains*. Cf. the state of affairs "Napoleon's having been victorious at Waterloo" exists but does not obtain. This statement is exactly parallel to 'The proposition that Napoleon was victorious at Waterloo exists but is not true'—obtaining and not obtaining are to states of affairs as being true and not being true are to propositions.

Similar points can be made about the adjective 'possible': it means 'possibly F' for some F that depends on the kind of object it is applied to. A possible state of affairs is a state of affairs that possibly obtains; a possible proposition is a proposition that is possibly true; a possible property is a property that is possibly instantiated; a possible set of properties is a set such that possibly its members are all instantiated by one thing; and a possible building is a building that possibly exists.

What, then, shall we say about the "possible acts" mentioned in your proposition (B)? Here I face a problem: I'm not sure what an "act" is. Let's pick one way of understanding what an act is. Let's say that acts are *universals*—like "obeying one's conscience": you might obey your conscience, and I might do *that* too—do the *same thing*, perform that very same act (despite the fact that your conscience is your conscience and my conscience is my conscience—and even if, in morally indistinguishable situations, your conscience tells you to speak the truth and mine tells me to lie). If acts are universals, they are abstract objects of some sort, and, I would say, are related to concrete reality by this relation: on a given occasion a given agent *performs* that act—or, of course, does not perform it, as the case may be. On that conception of acts, there exist (actually, he added redundantly) all sorts of acts that *don't* stand in this relation to concrete reality, acts that no one has ever performed ("proving Goldbach's conjecture," for example)—and all manner of acts that are performed by some people on some occasions and never performed by anyone else ("walking on the moon"). If all that is granted, I would express the content of your (B) in some such words as

> When we are trying to decide what to do, there are often different acts that we are able to perform and between which we must choose. Since (on any such occasion) we perform only one of these acts, the others are ones that we might have performed (on that occasion) but did not.

Now what follows if I am right about 'actually' and 'actual'? Well, if I'm right about 'actually' then saying that I've identified "existing" with "actually existing" is no criticism. Yes—I have done the thing I've been accused of, but it's no crime, for "existing" and "actually existing" *are* the same thing. Compare this case. "You've identified 'being red' with 'actually being red'" could not be a valid criticism of anyone's philosophical position—since "being red" and "actually being red" are the same property. And, for the same reason, "existing" and "actually existing" are the same property.

But what about the adjective—what about 'actual'? Could it be that when I say that there is only one thing that belongs to the extension of both the following properties,

—is a building
—was designed by Palladio for this part of the city,

and you say that there are three things, you are right and I am wrong because there *are* three such things—one of them (the one I was thinking of) actual, and the other two non-actual?

Well, I suppose the remarks I have already made contain my answer. The sentence '$x$ is an actual building' is equivalent to '$x$ is a building that actually exists'. And since '$x$ actually exists' is equivalent to '$x$ exists', and since (moreover) '$x$ exists' is equivalent to 'Something is identical with $x$', 'There is a building that does not actually exist' is equivalent to 'Some building is such that nothing is identical with it' or 'There is a building that is identical with nothing'; and prefix a negation-sign to '$\exists x$ ($x$ is a building & $\sim\exists y\ y = x$)' and you have an instance of a theorem of standard quantifier logic.

In my view, by the way, the term 'actualism' has done a great deal of damage. The term is used for a thesis that can be stated without using the protean, treacherous, multiply ambiguous word 'actual',[53] and what is called 'actualism' *should* be so stated—and should be renamed. And here is the statement:

Some people say that there are things that do not exist. Those people are wrong. Everything exists, and necessarily so. (Of course, 'Necessarily, everything exists' is not equivalent to 'Everything exists necessarily'.) Each instance of apparent quantification over merely possible or otherwise non-existent things must be either rejected or reinterpreted—that is, understood as a misleading way of quantifying over existent things—things like sets of properties or architectural plans. (The best name for this thesis would be 'existentialism', but that's already taken.) It is, however, unlikely that the name 'actualism' will be retired: it's too entrenched. It has become what Fowler calls a sturdy indefensible.

Here endeth the lesson. I hope it has made my reasons for rejecting possibilism clear.

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[53] That is to say, "actual" is a protean, treacherous, and multiply ambiguous word in philosophical discussions of "actualism." When it is used by speakers conducting the ordinary business of life, it is neither protean nor treacherous. And, although it has two entirely different functions in ordinary speech (the rhetorical or pragmatic function, and the "rigidifying" or "scope determining" function), it would be at best misleading to say that it is ambiguous—for there is never, and never could be, any confusion about which of these two functions it is performing on any given occasion of its use. (Footnote added to the original text.)

**10.** Our friend the Interlocutor returns:

> But what about the Kripke semantics for the language of quantified modal logic?[54] One of its essential elements is a universal set **U**, a subset of which is assigned to each of the objects that are intuitively to be thought of as possible worlds. And, again intuitively, the members of **U** that are assigned to a given world are those things that exist in that world. Now one of the 'worlds' is designated by a special symbol (Kripke uses '**G**') and can be thought of as the actual world. One could of course insist that that the subset of **U** that is assigned to **G** be **U** itself (or the subset of **U** comprising things assigned to worlds that are accessible from **G**; but let us assume that any two worlds are mutually accessible). But that would be entirely implausible. For consider the intended interpretation of '**U**'—that **U** is the set all things that exist in any possible world. Then to assign **U** to **G** is to affirm that the actual world contains all the things that there are in *any* possible world. And then the things there are are all the things there *could* be. It follows that, if there are no *F*s but there could have been *F*s, it must be that some of the non-*F*s that there actually are could have been *F*s. And that's an unacceptable result. Consider, for example, someone who believes that it's true, but only contingently true, that nothing is immaterial. If we add to Kripke semantics the requirement that the set of members of **U** that is assigned to **G** be **U** itself, it can be validly inferred from that belief that some actually existing—of course, material—thing could have been immaterial. Or suppose I believe (and surely this is true?) that Elizabeth I, who was childless, could have had a child—that her having had a child was not *metaphysically impossible*. Logic alone shouldn't commit me to the proposition that some actually existing person (much less, some actually existing hummingbird or neutron star) could have been her child—a proposition most metaphysicians would say was necessarily false. It just doesn't seem possible to suppose that *any* possible world contains everything there could have been. And, anyway, even if that's somehow wrong, even if some possible worlds are so 'ontologically rich' as to contain everything that could have been, why should one suppose that the actual world was one of them?

The Interlocutor has asked some excellent questions. I propose to address them not by considering the Kripke semantics for the language of quantified modal logic, but rather by considering what I'll call the Kripke truth-conditions for Modal English—Modal English being the language obtained by substituting suitable English predicates for the predicate-letters in the closed sentences of the language of quantified modal logic. (I'll assume that the language of quantified modal logic contains no terms but variables—and that Modal English therefore inherits this property—, and, like the Interlocutor, I'll ignore the accessibility relation. That is, I'll suppose that it is an equivalence relation. And I will assume that—in our sample sentences—the variables range only over concrete things.) The "Kripke truth-conditions" for sentences of Modal English are based on the intended interpretation of the Kripke semantics for the language of quantified modal logic. They will be stated in a language that contains the singular term '$\alpha$' (= 'the actual world'[55]), an existence predicate 'E', and the 'in' operator ("In $\alpha$, there are cats"; "in $z$, there are cats"). The range of the variables of this language comprises *possibilia* and possible worlds.

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[54] "Semantical Considerations on Quantified Modal Logic". See particularly pp. 64–67.

The Interlocutor's "contingent materialist" will accept these two sentences of Modal English:

8. $\Diamond \exists x\ x$ is immaterial
9. $\forall x \sim \Diamond\ x$ is immaterial.[56]

The Kripke truth-conditions for (8) and (9) are:

8′. $\exists x \exists y$ ($y$ is a world & in $y$, $x$ is immaterial)
9′. $\forall x$ (in $\alpha$, E$x$. $\rightarrow \sim \exists y$ ($y$ is a world & in $y$, $x$ is immaterial)).

And from (8′) and (9′), we may derive (by a trivial application of textbook quantifier logic),

$\exists x \sim$ in $\alpha$, E$x$.

The Kripke truth-conditions for sentences of Modal English are therefore not acceptable to those of us who deny that there are things that do not exist. (Or they are if both (8) and (9) are true. But it is easy to devise only slightly more complicated cases in which the analogues of (8) and (9) are very nearly uncontroversial. For example '$\Diamond \exists x\ x$ is bessmothered' and '$\forall x \sim \Diamond\ x$ is bessmothered'—where 'is bessmothered' is a "'pegasizes'-like" predicate that represents 'is a child of Elizabeth I'.) That is to say, the Kripke truth-conditions are not acceptable to "actualists."

It is, however, possible to state "actualistically acceptable" truth-conditions for the sentences of Modal English, truth conditions stated in a language in which '$x$ exists' and '$\exists y\ y = x$' are mere stylistic variants, and in which 'There is nothing that might exist but does not in fact exist' is therefore a substitution-instance of a theorem of quantifier logic—namely '$\sim\exists x\,(\mathrm{F}x \;\&\; \sim \exists y\; y = x)$'.

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[55] That is, "$\alpha$" abbreviates the *definite description* "the actual world"; it is not a proper name of whatever world happens to be actual.

[56] That is, the contingent materialist believes that every material thing is essentially a material thing.

Perhaps the best-known actualist semantics is that of Thomas Jager.[57] (Professor Jager did the hard, technical work. The intuitive idea behind "Jager semantics" is due to Alvin Plantinga.) In a Jager semantics, individual essences do duty for objects, actual or merely possible. I will try to give the reader a rough idea of the way a Jager semantics works by presenting "Jager truth-conditions" for sentences of Modal English—but in presenting this truth-conditions, I'll speak of haecceities rather than individual essences. I begin with some definitions.

The *haecceity of* an object is the property of being identical with that object. (I urge readers at this point to glance at the brief discussion of haecceities in Section 7 of Chapter III.) Thus, the property of being identical with Plato (or simply the property of being Plato) is the haecceity of Plato: there is an *x* such that the property of being identical with Plato is the property of being identical with *x*.[58] (But there is no *x* such that the property of being identical with the teacher of Aristotle is the property of being identical with *x*.) If properties are, as I maintained in Chapter III, "unsaturated assertibles," the haecceity of Plato is the unsaturated assertible *that it is Plato*. But the Jager truth-conditions I shall present are consistent with any account of properties according to which (a) there is, for any object whatever, the property of being identical with that object and (b) all properties exist necessarily (and are essentially the properties they actually are; for example, the property mortality exists necessarily, but there is no world in which it is the property electrical conductivity—much less a world in which it is a hummingbird or a neutron star).

*An* haecceity is something that *could be* the haecceity of something. All properties exist necessarily, and hence all haecceities exist necessarily. (In this sense: in every possible world, *there are* exactly the same haecceities.) But, of course, many things exist only contingently (if Professor Williamson will forgive me), Plato among them. In a world in which Plato does not exist, the property of being Plato exists but is not the haecceity of Plato—or, indeed, of anything, for it can hardly have been the haecceity of something other than Plato. But (we continue to suppose that the accessibility relation is an equivalence relation) in that world, it *could have been* the haecceity of something—unlike, for example, the property of being the teacher of Aristotle, which could not have been the haecceity of something. It is, therefore, by the terms of our definition, *an* haecceity even in worlds in which it is not the haecceity *of* anything. And if it is not the haecceity of Plato in "non-Platonic" worlds, neither is it the property of being identical with

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[57] "An Actualist Semantics for Quantified Modal Logic".

[58] An *individual essence* of an object is any property that is modally equivalent to its haecceity. Thus, the property of being identical with Plato if 198,733 is a prime number is one of Plato's essences but is not his haecceity.

Plato in those worlds. 'The property of being identical with Plato' therefore designates the property of being identical with Plato non-rigidly. But if we have a phrase—'Platonity', say—that rigidly designates the property of being identical with Plato, we may say

> If $x$ is a world in which Plato does not exist, then in $x$ there is no $y$ such that Platonity is the property of being identical with $y$.

And let us say that a property $x$ is *instantiated* in a world $y$ if, in $y$ there is something that has $x$—and similarly for 'the property $x$ is *co-instantiated with* the property $y$ in the world $z$'. And we may say that a dyadic relation $x$ is co-instantiated with an ordered pair of properties $\langle y, z\rangle$ in a world $w$ if something that has $y$ and something that has $z$ enter into $x$ "in that order" in $w$. (The concept of a sequence of things that enter into a relation in the order displayed in the sequence requires a detailed analysis. I beg to be spared the task of providing it.) And so, *mutatis mutandis*, for $n$-adic relations and $n$-term sequences of properties where $n > 2$.

I will now give an example of "Jager truth-conditions" for sentences of Modal English. As the Kripke truth-conditions for sentences of Modal English were based on the intended interpretation of Kripke's semantics for the language of quantified modal logic, so the Jager truth-conditions for sentences of Modal English will be based on the intended interpretation of Jager's semantics for the language of quantified modal logic. Once more we consider

8. $\Diamond \exists x\, x$ is immaterial
9. $\forall x \sim \Diamond\, x$ is immaterial.

The Jager truth-conditions for (8) and (9) are:

8″. $\exists x$ ($x$ is an haecceity & $\exists y$ ($y$ is a world & in $y$, $x$ and immateriality are co-instantiated))
9″. $\forall x$ ($x$ is an haecceity & in $\alpha$, $x$ is instantiated. $\rightarrow \sim \exists y$ ($y$ is a world & in $y$, $x$ and immateriality are co-instantiated)).

(The range of the variables is unrestricted.) A more elaborate example, the Modal English equivalent of 'All Greeks might have had children other than the children (if any) they actually had', and its Jager truth-condition:

10. $\forall x \forall y$ ($x$ is Greek & $x$ is a parent of $y$. $\rightarrow \Diamond \exists z$ ($x$ is a parent of $z$ & $z \neq y$)).
10″. $\forall x \forall y$ ($x$ and $y$ are haecceities & in $\alpha$, $x$ is co-instantiated with Hellenity & in $\alpha$, the parenthood relation is co-instantiated with $\langle x, y\rangle$. $\rightarrow \exists z$ ($z$ is an

> haecceity & $z \neq y$ & $\exists w$ ($w$ is a world & in $w$, the parenthood relation and $\langle x, z \rangle$ are co-instantiated))).

Like almost any proposal for doing things in a way different from the way they have customarily been done, the proposal to let uninstantiated haecceities do the work that has customarily been assigned to merely possible objects has met with its share of opposition. I will mention two reasons that have been given for resisting this proposal. The first might be summed up in these words, which I will attribute to our friend the Interlocutor.

> I find it easier to believe in mere *possibilia* than in haecceities, even instantiated haecceities—and the uninstantiated ones are even harder to believe in.[59]

It cannot be that the Interlocutor accepts the "neo-Quinean" meta-ontology set out in Chapter I of this volume. Anyone who accepted that meta-ontology would be committed to the thesis that each of the sentences after the first in the following sequence is a logical consequence of the sentence that immediate precedes it.

> There are merely possible objects
> There are objects that might exist but do not exist
> There are objects that do not exist
> $\exists x \sim x$ exists
> $\exists x \sim \exists y\, y = x$
> $\exists x\, \forall y\, y \neq x$
> $\exists x\, x \neq x$.

And I think it unlikely that the Interlocutor will be willing to accept the final sentence in this sequence. And, I should think, nothing could be harder to believe in than something that is not identical with itself—not even something that both is and is not identical with itself. It is—surely?—easier to believe that there is an uninstantiated haecceity that is, in some possible world, instantiated by a son of Elizabeth I than it is to believe in something that is not identical with itself.

In my view, anyone who wishes to answer the question,

> Are mere *possibilia* hard things for a philosopher to believe in (like, say, the null object or Lewis's worlds or gunk) or easy things (like the validity of the principle

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[59] Cf. section 5 of Sam Cowling, "Haecceitism," *The Stanford Encyclopedia of Philosophy.*

> of non-contradiction, or composite objects, or entities that exist at more than one time)?[60]

should begin by considering the question, "Are all meta-ontologies that are consistent with the existence of mere *possibilia* hard to believe—or are at least some of them easy to believe?" I find any meta-ontology according to which 'there are' has multiple meanings *extremely* hard to believe. The reasons that underlie my intransigence on this issue have been set out in Chapter I. My present point is simply that a disagreement about whether there are mere *possibilia* is only superficially a disagreement about modal ontology. Indeed, it is only superficially a disagreement about ontology. It is, when fully understood, a disagreement about meta-ontology, a disagreement about the philosophy of existential quantification—or, what is much the same thing, a disagreement about the meaning of 'there is' and 'exists'. It could thus be equally well described as a disagreement about the philosophy of logic—or even a disagreement about the philosophy of language.

And, really, *are* haecceities all that puzzling? I suppose that that question, too, depends on a prior question: What are properties (if properties there indeed are)? If properties are what I have said they are, then Platonity (the property of being Plato) is simply what both Socrates and Simmias said of the figure approaching them through the mist: *that it is Plato*. If that is a puzzling thing, it is certainly no *more* puzzling a thing than the proposition that Plato exists. And the statement that Platonity exists in worlds in which it is uninstantiated is no more puzzling than is the statement that *that Plato exists* exists in worlds in which it is false. (Indeed, it would be easy enough, using Jager semantics as a model, to construct an actualist semantics for quantified modal logic in which it is not haecceities that do the work a possibilist semantics assigns to *possibilia*, but rather "individual existence propositions"—propositions like *that Plato exists*, *that Socrates exists*, *that Saul Kripke exists* . . . .)

Of course, an anti-haecceitist may well insist that even *that Plato exists* exists only in worlds in which Plato exists. (Perhaps because—so they maintain—Plato is in some sense a *constituent* of *that Plato exists*.) Presumably, however, no such anti-haecceitist will be willing to say that (in any sense of 'there are') there are merely possible *individual* things? I suppose I can imagine someone saying, "Look, if Plato didn't actually exist, he'd still, so to speak, *be there*—be there as a mere *possibile*. And of course, he'd still be Plato." But if any anti-haecceitists did take that position, they would have no reason to deny that in worlds in which Plato does not actually exist, the false proposition *that Plato (actually) exists* actually exists—no reason to deny that in such worlds there actually is such a false proposition as *that Plato (actually) exists*.

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[60] I expect that any philosopher's lists of hard-to-believe-in things and easy-to-believe-in things will be regarded as wrong-headed by a significant proportion of the members of the profession. And I suppose that all philosophers will grant both that some philosophers believe in various things it's hard to believe in and that some philosophers do not believe in various things it's easy to believe in.

The second reason for resisting the proposal that the standard *possibile*-based semantics (Kripke semantics) for the language of quantified modal logic be replaced by a haecceity-based semantics is that, in Christopher Menzel's words, the "a [Jager] semantics provides no way of interpreting the basic definitions and principles of the semantics itself."[61]

I will consider only one case of the flaw that is alleged, a certain "principle" of the semantics. Note first that many sentences of Modal English contain no modal operators—for example

11. $\forall x$ ($x$ is Greek → $x$ is mortal).

(For '$\forall x$ (F$x$ → G$x$)' *is* a sentence of the language of quantified modal logic.) The Jager truth-condition for (11) is

11″. $\forall x$ ($x$ is an haecceity & in α, $x$ is co-instantiated with Hellenity. → in α, $x$ is co-instantiated with mortality).

But wait! Suppose that, although (in α) all Greeks who have or instantiate haecceities are mortal, there is (in α) an immortal Greek who instantiates no haecceity. Then (11) is false and (11″) is true. A statement of the Jager truth-conditions for Modal English must incorporate some general principle that rules this formal possibility out. The obvious candidate is

Everything has an haecceity.

The Jager truth-condition for *that* sentence—or at any rate for the sentence (as one might word it),

12. $\forall x$ $x$ is haecceated

is

12″. $\forall x$ ($x$ is an haecceity & in α, $x$ is instantiated. → in α, $x$ is co-instantiated with haecceation).

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[61] Christopher Menzel, "Problems with the Actualist Accounts."

But wait! Proposition $(12'')$ is a tautology—it says simply that if an haecceity is the haecceity *of* something, then the thing of which it's the haecceity has an haecceity. And, therefore, $(12'')$ is true even if my cat Sam has no haecceity—and true even if *nothing* has a haecceity. A Jager semantics, therefore, "provides no way of interpreting a basic principle of the semantics itself."[62]

This objection, unlike the first objection, seems to me to be unanswerable. In my view, it shows that, at the very least, Jager semantics requires some sort of revision. It has convinced me that a Jager semantics is probably not the best approach to the problem of finding an actualist semantics for the language of quantified modal logic. I would note, however, that it is an objection to *Jager's* way of letting "uninstantated haecceities do the work that has customarily been assigned to merely possible objects." Perhaps there are other ways.

I will not attempt to present such a semantics—I am, after all, no logician—, but I will make a few hints that will perhaps count as a gesture in the direction of a "non-Jagerian but haecceity-based" actualist semantics. The semantics at which these hints are directed would employ much of the same "ideology" as a Jager semantics, but the truth-conditions it assigned to sentences containing modal operators would in general be significantly different in quantificational structure from those Jager semantics assigns to those sentences.

Here are some examples of the non-Jagerian but haecceity-based actualist truth-conditions I would propose for some sentences of Modal English. I use '$\mathrm{H}xy$' to abbreviate '$x$ is an haecceity of $y$' and '$\mathrm{H}x$' to abbreviate '$x$ is an haecceity'—that is, to abbreviate '$\exists z$ ($z$ is a world & in $z$, $\exists y\ \mathrm{H}xy$)' The meta-language contains neither a term that denotes the actual world nor an actuality predicate.

$\forall x\ (x \text{ is a Greek} \rightarrow x \text{ is mortal})$
$\forall x\ (x \text{ is a Greek} \rightarrow x \text{ is mortal})$

$\forall x \exists y\ \mathrm{H}yx$
$\forall x \exists y\ \mathrm{H}yx.$

(That is to say, sentences of Modal English that contain no modal operators have the truth-conditions they have as substitution-instances of sentences in the language of ordinary quantifier logic.)

$\Diamond\ \exists x\ x \text{ is immaterial}$
$\exists x\ (\mathrm{H}x\ \&\ \exists y\ (y \text{ is a world } \&\ \text{in } y,\ x \text{ and immateriality are co-instantiated}))$

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[62] One might, indeed, wonder whether even the simple notion of a property's being instantiated is "available" to the proponents of a Jager semantics. I invite the reader to write out the Jager truth-condition for "$\forall x$ ($x$ is a property $\rightarrow$. $x$ is instantiated $\leftrightarrow \exists y\ y$ has $x$)."

(That is to say, sentences of Modal English that consist of a modal operator prefixed to a closed sentence have the Jager truth-conditions.)

$\forall x \sim \Diamond\, x$ is immaterial
$\forall x \forall y\, (\mathrm{H}yx \rightarrow\, \sim \exists z$ ($z$ is a world & in $z$, $y$ and immateriality are co-instantiated))

$\forall x \forall y$ ($x$ is Greek & $x$ is a parent of $y$. $\rightarrow \Diamond\, \exists z$ ($x$ is a parent of $z$ & $z \neq y$))
$\forall x \forall y \forall z \forall w$ ($x$ is Greek & $x$ is a parent of $y$ & $\mathrm{H}zx$ & $\mathrm{H}wy$. $\rightarrow \exists v\, (\mathrm{H}v$ & $v \neq w$ & $\exists u$ ($u$ is a world & in $u$, the parenthood relation and $\langle z, v \rangle$ are co-instantiated))).

$\forall x \forall y\, (\sim x$ is a parent of $y$. $\rightarrow\, \sim \Diamond\, x$ is a parent of $y$)
$\forall x \forall y \forall z \forall w\, (\sim x$ is a parent of $y$. & $\mathrm{H}zx$ & $\mathrm{H}wy : \rightarrow\, \sim \exists v$ ($v$ is a possible world & in $v$, the parenthood relation and $\langle z, w \rangle$ are co-instantiated)).

And here is one further example, an example that displays and contrasts the Kripke truth-conditions, the Jager truth-conditions, and the proposed truth-conditions for a sentence that is both a sentence of Modal English and a sentence in the language of quantified modal logic:[63]

$\forall x \Diamond \sim \exists y\; y = x$.

Kripke (variables range over worlds and *possibilia*):

$\forall x$ (in $\alpha$, $\mathrm{E}x$. $\rightarrow \exists y$ ($y$ is a world & $\sim \exists z$ (in $y$, $\mathrm{E}z$. & $z = x$)))

Jager (variables range over worlds and properties, including haecceities):

$\forall x$ ($x$ is an haecceity & in $\alpha$, $x$ is instantiated. $\rightarrow \exists y$ ($y$ is a world & $\sim \exists z$ ($z$ is an haecceity & in $y$, $z$ is instantiated. & $z = x$)))

Proposed (range of variables is unrestricted):

$\forall x \forall y\, (\mathrm{H}yx \rightarrow \exists z$ ($z$ is a world & $\sim \exists w\, (\mathrm{H}w$ & in $z$, $w$ is instantiated. & $w = y$))).

I claim to be able (using the ideas and techniques on display in these examples) to present correct truth-conditions for any sentence of Modal English. I maintain that none of the statements of the truth-conditions for any sentence of Modal English will involve quantifying over things that do not (actually) exist. We have seen that the "proposed" truth-condition for '$\forall x \exists y\, \mathrm{H}yx$' is not trivially wrong—as is the Jager truth-condition for '$\forall x\ x$ is haecceated'. (The proposed truth-condition is, so to speak, trivially right.) And I can see no reason to think that the proposed truth-conditions confer a wrong truth-condition on any principle those truth-conditions presuppose. If I am right about these things, it should be possible for anyone who has mastered the tools of the logician's trade (which I have not) to devise an acceptable actualist semantics for the language of quantified modal logic—a semantics according to which a sentence in the language of quantified modal logic is semantically valid if and only if it is semantically valid according to the Kripke semantics.

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[63] "Modal English being the language obtained by substituting suitable English predicates for the predicate-letters in the closed sentences of the language of quantified modal logic." "$\forall x \Diamond \sim \exists y\; y = x$" is a closed sentence of the language of quantified modal logic that contains no predicate-letters.

One important test case for a semantics for modal language is the Barcan formula and its converse. Consider first this instance of the Barcan formula.

> $\forall x \,\Box\, x$ is omnipotent. $\rightarrow \Box\, \forall x\ x$ is omnipotent.

In a world *N* in which God created nothing, everything would be necessarily omnipotent; but in that world (and in all others) false that, necessarily, everything is omnipotent.

The proposed truth-condition of the antecedent is

> $\forall x\ \forall y$ (H$yx \rightarrow \forall z$ ($z$ is a world $\rightarrow$ in $z$, $y$ and omnipotence are co-instantiated);

and of the consequent:

> $\forall x\ \forall y$ ($x$ is a world & $y$ is an haecceity. $\rightarrow$ in $x$, $y$ and omnipotence are co-instantiated if $y$ is instantiated).

It is evident that in *N*, the truth-condition of the antecedent is true and the truth-condition of the consequent is false. As to the converse Barcan formula, suppose that nominalism is true (and necessarily true). We have this instance of the converse Barcan formula

> $\Box\, \forall x\ x$ is concrete. $\rightarrow \forall x \,\Box\, x$ is concrete.

The antecedent, of course, is true. But (at least if there are any contingent beings) the consequent is false—for it is true only if every being's haecceity is co-instantiated with—concressence, would it be?—in every possible world. But how, then are we to recognize the fact that concrete things are necessarily concrete? It seems that there are two ways to interpret '$x$ is necessarily concrete': '$x$ (exists and) is concrete in every possible world' and '$x$ is concrete in every world in which it exists'. We may express this distinction in semantical terms as follows. Where '$p$' represents a closed sentence, and where (here, for the sake of saving time, I do violence to my scruples about use and mention) 'F-ness' stands for the property expressed by the predicate 'F'.

| | |
|---|---|
| $\Box p$ | $\forall z$ ($z$ is a world $\rightarrow$ in $z$, $p$) |
| $\Box Fx$ | $\forall y$ ($Hyx \rightarrow \forall z$ ($z$ is a world $\rightarrow$ in $z$, $y$ and F-ness are co-instantiated)) |
| $\blacksquare p$ | $\forall z$ ($z$ is a world $\rightarrow$ in $z$, $p$) |
| $\blacksquare Fx$ | $\forall y$ ($Hyx \rightarrow \forall z$ ($z$ is a world $\rightarrow$ (in $z$, $y$ is instantiated $\rightarrow$ in $z$, $y$ and F-ness are co-instantiated)). |

Then (assuming that nominalism is a necessary truth and that some concrete objects are contingent), and that no concrete object could have been an abstract object:

$\Box \forall x$ $x$ is concrete. $\rightarrow \forall x \Box x$ is concrete

has a true antecedent and a false consequent, and

$\blacksquare \forall x$ $x$ is concrete. $\rightarrow \forall x \blacksquare x$ is concrete

has a true antecedent and a true consequent.

But even if everything I have said about modal semantics up to this point is right, there is more to be said, for there are stronger modal languages than Modal English. English is such a language, for there are modal propositions that are expressible in English that are not expressible in Modal English. Consider, for example, the children of Lady Macbeth. We know that that formidable woman is a mother, but we don't know the number of her children or anything else about them. (She says, "I have given suck," and nothing else of relevance—a statement that leaves us exactly as well informed as we should have been if, anticipating Frege, she had said, "The number of my offspring is not zero.") Suppose for the sake of the example that Lady Macbeth was a real, historical person. The statement, "Lady Macbeth had at least one child, and she could have had the children she actually had and other children as well" is obviously a meaningful modal statement (a true one, most of us would suppose, if she were indeed a real person), and it cannot be stated in Modal English. It can, however, be stated in various augmented versions of Modal English. It can, for example, be expressed in "Modal English with '@'," where '@' is an "actuality" operator. (So, for example, '$\Diamond\exists x$ (@ $x$ is a bachelor. & $x$ is married)' means, 'It could have been that someone who is actually a bachelor was married'.) Let '$Mx$' abbreviate 'Lady Macbeth[64] is the mother of $x$'. We can represent 'Lady Macbeth had at least one child, and she could have had the children she actually had and other children as well' in "Modal English with '@'" as

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[64] In this predicate, "Lady Macbeth" is to be understood as a rigid designator—and not as a description like "the bearer of the title 'Lady Macbeth'."

13. $\exists x\ \mathrm{M}x.\ \&\ \Diamond\ (\forall x\ (@\ \mathrm{M}x. \rightarrow \mathrm{M}x)\ \&\ \exists x\ ({\sim}\ @\ \mathrm{M}x.\ \&\ \mathrm{M}x))$.

Can we augment the Proposed truth-conditions for the sentences of Modal English in such a way as to produce truth-conditions for the sentences of Modal English with '@'? I will not attempt a general answer to this question, but I will point out that actualist truth-conditions can be given for (13) that require no ideology beyond that required by the Proposed truth-conditions—or at any rate, none beyond the *predicate* 'is actual'. To wit:

Lady Macbeth is someone's mother, and
there is a world $w$ such that for any world $x$,
if $x$ is actual, then,[65]
in $w$, every haecceity that is co-instantiated with M in $x$ is co-instantiated with M, and some haecceity that is not co-instantiated with M in $x$ is co-instantiated with M.

Or, where 'W$x$' abbreviates '$x$ is a possible world' and 'A$x$' abbreviates 'W$x$ & $x$ is actual',

13′. $(\exists x\ \mathrm{M}x)\ \&\ \exists x\{\mathrm{W}x\ \&\ \forall y\ [\mathrm{A}y \rightarrow$ in $x$, $(\forall z\ (\mathrm{H}z\ \&$ in $y$, $z$ is co-instantiated-with M-hood. $\rightarrow z$ is co-instantiated with M-hood) $\&\ \exists z\ (\mathrm{H}z\ \&\ {\sim}$ in $y$, $z$ is co-instantiated with M-hood. & $z$ is co-instantiated with M-hood$))]\}$.

I conclude, tentatively, that the ontological requirements of the semantics of modal statements do not extend to mere *possibilia*. And, if that is so, philosophers who embrace the meta-ontology defended in Chapter I of this book—and who are therefore committed to actualism—can be confident that an actualist ontology of possibility and necessity adequate to the needs of modal metaphysics is available.[66]

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[65] Note: "if $x$ is actual, then" and not "if, in $w$, $x$ is actual, then" or "if $x$ is actual in $w$, then." The only occurrence of the predicate "is actual" is outside the scope of the open operator "in $w$."

[66] I thank both Christopher Menzel (whose opinions about philosophical matters pertaining to quantified modal logic are very close to my own) and Uwe Meixner (whose opinions about philosophical matters pertaining to quantified modal logic are diametrically opposed to mine) for stimulating correspondence on all matters pertaining to actualism and possibilism. They are, of course, responsible for none of my errors.

# V

# Being and Generality

**1.** The account of quantifiers and variables presented in Section 3 of Chapter I has rivals. If any of these rivals is right, this book rests on a mistake. My purpose in this chapter is to examine some alternatives to the Quinean account of quantification. The reader will perhaps not be astonished to learn that this examination will result in consistently negative evaluations of these alternatives.

In Chapter I, I presented what might be described as a "bottom-up" account of quantification. I began my account of quantification with sentences of an artificial "philosopher's English" (to borrow a phrase Dorothy Grover has used for a similar device of her own), ordinary English that been *regimented* by allowing only one third-person-singular pronoun ('it') and allowing generality to be expressed only by the use of two "quantifier-phrases" ('Everything is such that' and 'Something is such that'), and *supplemented* by brackets and an indefinite stock of subscripts for 'everything' and 'something' and 'it'. The following sentence is an example of this "philosopher's English":

> Everything$_x$ is such that (if it$_x$ is a person, then if it$_x$ acts as the attorney of it$_x$, then something$_y$ is such that (it$_y$ is a client of it$_x$ and it$_y$ is a fool)).

(This sentence, I contend, expresses the same proposition as the proverb, "Anyone who acts as his own attorney has a fool for a client.") I proceeded, by systematic abbreviation of the sentences of this artificial extension of English, to quantifier-variable sentences. The present example, in its abbreviated form, is:

> $\forall x$ (if $x$ is a person, then, if $x$ acts as the attorney of $x$, $\exists y$ ($y$ is a client of $x$ and $y$ is a fool)).

I went no further. But I could have gone further. I could have gone on to introduce "predicate letters" and have proceeded to produce displays like this:

> $\forall x$ (if F$x$, then, if G$xx$, $\exists y$ (H$yx$)).

By taking this further step, by abstracting from the meanings of English open sentences like '$x$ is a person' and '$y$ is a necessarily false proposition and $x$ entails the truth of $y$', I could have displayed some of the logical structure common to the attorney-client sentence and, say,

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> $\forall x$ (if $x$ is a proposition, then, if $x$ entails the falsity of $x$, $\exists y$ ($y$ is a necessarily false proposition and $x$ entails the truth of $y$)).

(And why should one wish so to abstract from the meanings of particular open sentences and to be able so to display in a single formula a logical structure that is common to many sentences? I shall assume that we all know the answer to this question.)

If I had taken this further step, if I had introduced predicate letters, I should, in effect, have introduced what is commonly called the language of first-order logic.[1] If the language of first-order logic were introduced to someone in this "bottom-up" way, that person could have no question about the meaning or interpretation of the quantifiers—or not, at any rate, unless he or she had questions about the meanings of the English words 'everything' and 'something'. But the language of first-order logic is not usually introduced by the "bottom-up" method. It is usually introduced by the "top-down" method: one introduces certain symbols—'∀' and '∃' and lower-case italic variables and predicate letters and punctuation marks and perhaps sentential connectives—and one supplies certain formation rules, rules that determine which of the strings of these symbols are to count as properly constructed sentence-schemata or "well-formed formulae." (And one supplies methods that determine which sentences of the "mixed" type, sentences like

> $\forall x$ (if $x$ is a person, then, if $x$ acts as the attorney of $x$, $\exists y$ ($y$ is a client of $x$ and $y$ is a fool)),

are, with appropriate qualifications, to count as "instances" of which symbolic sentences.) If one is introduced to the language of first-order logic in this "top-down" way, it can look to one as if there are questions about how the symbols it comprises should be interpreted, and, in particular, it can look as if there is a question about how the quantifiers should be interpreted. This is indeed what has seemed to many philosophers to be the case. The question, having been posed, has received answers: interpretations of the quantifiers have been offered. The standard interpretation is the "objectual" interpretation (sometimes called the "referential" interpretation).[2] The objectual interpretation is most easily explained by an illustration. Consider the sentence

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[1] I use the phrase 'the language of first-order logic' as a mere label. For reasons that will be set out in Section 4, I regard the phrase 'first-order logic' as meaningless—that is, although what is called "first-order logic" exists, 'first-order logic' is a meaningless description of it.

[2] For a typical expression of the view that there are rival interpretations of "the quantifiers" (*viz*, the objectual and the substitutional, see Susan Haack, *Philosophy of Logics*. See also Alex Orenstein, *Existence and the Particular Quantifier*.

$x$ is taller than $y$ and $y$ is taller than $z$.

According to the objectual interpretation of the quantifiers, if this sentence is meaningful, then the open sentence '$x$ is taller than y and $y$ is taller than $z$' must have an *extension*, a set-theoretical object whose ultimate members are drawn from a certain "domain of quantification." The extension of a sentence like the one we are now considering, a sentence in which three variables occur free, would normally be understood to be a set of ordered triples: in the present case the set containing all and only those triples whose first member is taller than their second member and whose second member is taller than their third.[3] (The members of the triples must belong to the domain of quantification. I ask the reader to supply appropriate references to the domain of quantification in the sequel.) The result of prefixing '$\exists z$' to this open sentence is a new open sentence

$\exists z$ ($x$ is taller than $y$ and $y$ is taller than $z$).

If our original open sentence had an extension, this one does too, and its extension is determined by the extension of the original: on the particular (and usual) set-theoretical understanding of 'extension' that we have employed, the extension of this sentence is the set of all ordered pairs whose first member is taller than their second member and whose second member is taller than *something*. The result of prefixing '$\forall y$' to this second sentence is a third open sentence

$\forall y$ $\exists z$ ($x$ is taller than y and $y$ is taller than $z$).

The extension of this third sentence is determined by the extension of the second sentence: it is the set of all objects that are taller than *everything* that is taller than something (and this will of course be the empty set, since, given that there are things taller than something, nothing can be taller than all of them, owing to the fact that nothing can be taller than itself).

Finally, prefixing '$\exists x$' to this sentence produces a fourth sentence (not, this time, an *open* sentence) whose extension is 'truth' if *something* belongs to the extension of the third sentence and 'falsity' otherwise—for it is useful to stipulate that closed sentences have extensions, and that their extensions are their truth-values. (This stipulation makes for elegance in generalization about sentences and extensions; it has, moreover, a non-arbitrary basis in the fact that truth-value is that semantical property of a closed sentence that necessarily remains unchanged when syntactic parts of that sentence are replaced by other expressions having the same extensions.) And, since the extension of '$\forall y \exists z$ $x$ is taller than $y$ and $y$ is taller than $z$' is, as we saw, empty, the extension of our final sentence is falsity—that is, it is false.

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[3] But the members of the triples in the extension of '$x$ is taller than $y$ and $y$ is taller than $z$' do not have to be deployed in the order tallest-intermediate-shortest. They could as well be deployed in the reverse of that order or even in the order intermediate-shortest-tallest. What is important is that they be deployed in the same order in each triple and that, if they are deployed in, say, the order intermediate-shortest-tallest, the variable '$x$' in the open sentence be correlated with the third member of each triple, the variable '$y$' with its first member, and the variable '$z$' with its second member.

This demonstration that '$\exists x \forall y \exists z$ $x$ is taller than $y$ and $y$ is taller than $z$' is false by a sequential examination of the extensions of the sentences

$x$ is taller than $y$ and $y$ is taller than $z$
$\exists z$ ($x$ is taller than $y$ and $y$ is taller than $z$)
$\forall y \exists z$ ($x$ is taller than $y$ and $y$ is taller than $z$)
$\exists x \forall y \exists z$ ($x$ is taller than $y$ and $y$ is taller than $z$)

and an explanation of the way in which the extension of each succeeding sentence is determined by the extension of its predecessor, illustrates the "objectual interpretation" of the quantifier. According to proponents of the objectual interpretation of the quantifier, one explains what a quantifier means by showing how prefixing it to a sentence produces a sentence whose extension is a function of the extension of the original sentence: the existential quantifier is *this* extension-transformer; the universal quantifier is *that* extension-transformer.[4] (Or, since it turns out that '$\sim\forall\sim$' is the same extension-transformer as '$\exists$', and '$\sim\exists\sim$' is the same extension-transformer as '$\forall$', one might explain one of the quantifiers as an extension-transformer, and proceed to introduce the other by definition.) Proponents of the objectual interpretation therefore reject one of the central theses of Chapter I: that the only way to explain the meaning of the quantifiers is to show how to translate phrases containing them into language that is already understood.

It is obvious that the "objectual interpretation of the quantifiers" implies that there is a close connection between the two extension-transformers and the quantificational apparatus of ordinary language: this is evident from the use we made of the ordinary apparatus in explaining how each of the two extension-transformers transforms the extensions of the sentences to which it is prefixed. But this connection, is, at least in the order of exposition, something to be *discovered*: first comes the symbol, then the interpretation, then the "discovery" that '$\forall$' is closely allied with 'all' and 'any' and 'every' and '$\exists$' with 'some' and 'exists' and 'there is'. This official ordering of exposition—symbol, interpretation, relation to the devices of ordinary speech—might be of little import if the objectual interpretation of the quantifier were the only interpretation that has been offered (in that case, we should hardly bother with a special name for it). But, as we all know, other interpretations of the quantifier have been given, and this ordering encourages the idea that you can "have" the quantifiers independently of the quantificational devices of ordinary speech—that their connection with 'everything' and 'something' might somehow be problematic, that this connection is something that there could be legitimate disputes about.

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[4] As our example shows, it is not strictly speaking the quantifiers themselves—'$\forall$' and '$\exists$'—that are extension-transformers; it is quantifier-*phrases* like '$\forall y$' and '$\exists z$' that are extension-transformers.

In my view, the idea of an interpretation of the quantifiers does not make sense. The quantifiers are essentially regimentations of certain words and phrases of English (or of some other natural language) and these, being English words and phrases in everyday use, come equipped with meanings—and they are as close to being unambiguous as ordinary-language phrases ever are. (But *are* these phrases unambiguous or even close to being unambiguous? Consider the sentence 'Some of the gods worshiped by the Greeks were worshiped under other names by the Romans'. Doesn't this sentence show that 'some' is ambiguous? There are undoubtedly cases in which 'some . . . s are' means 'there exist . . . s that are.' Doesn't this example show that 'some' has *another* sense, a sense that does not imply existence? And if this is the case with 'some', is it not likely to be the case with 'there is'? We shall return to the sentence 'Some of the gods worshiped by the Greeks were worshiped under other names by the Romans' when we examine the substitutional interpretation of the quantifier in the following section.) As to the so-called objectual interpretation of the quantifiers, the only thing I have against it is that it is not an interpretation of the quantifiers: it is rather a *theory*, a beautiful and true[5] theory, concerning the truth-values of closed sentences containing quantifiers.[6] (For all its beauty and truth, it is not a *complete* theory. In saying this, I do not use the word 'complete' in its technical, metalogical sense: I mean only that it is not applicable to all sentences that contain quantifiers and have truth-values. There are open sentences to which quantifiers can be meaningfully prefixed and which yet have no extension: '$x$ is a set and $x$ is not a member of $x$', for example, or 'if $x$ is an ordinal number, $y$ is an ordinal number greater than $x$'—and is it not true that some sets are not members of themselves?; is it not true that for every ordinal number there is a greater?[7])

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[5] I say that '$\exists x\ x$ is a dog' means 'Something is such that it is a dog'. It seems evident to me that 'Something is such that it is a dog' is true if and only if the extension of 'it is a dog'—the set of things of which 'it is a dog' is true, the set of dogs—has at least one member. I say that '$\exists x \forall y$ (if $y$ is a dog, then $x$ is an ancestor of $y$' means 'Something$_x$ is such that everything$_y$ is such that (if it$_y$ is a dog, then it$_x$ is an ancestor of it$_y$)'. and it seems evident to me that this sentence is true if and only if at least one thing belongs to the extension of 'everything$_y$ is such that (if it$_y$ is a dog, then it$_x$ is an ancestor of it$_y$)'. And it also seems evident to me that a thing satisfies 'everything$_y$ is such that (if it$_y$ is a dog, then it$_x$ is an ancestor of it$_y$)' if and only if every dog is such that it, that thing, is an ancestor of that dog. That is to say: the standard way of assigning semantic values (truth or falsity) to sentences in the quantifier-variable idiom as a function of the semantic values of their constituent predicates (and their logical structure) should not be regarded as an explanation of the meanings of sentences in the quantifier-variable idiom. Their *meanings* are given by the sentences of a regimented and supplemented natural language of which they are systematically specified abbreviations. The "standard way" should rather be regarded as a (correct) truth-theory for the sentences of that regimented and supplemented natural language.

[6] "But isn't Quine, whose 'meta-ontology' you say you have adopted, a vociferous advocate of the objectual interpretation of the quantifier?" In this sense: he would agree that the quantifiers transform extensions just as the objectual theory says they do. He would presumably not agree with my contention that one cannot explain what the quantifiers mean by specifying how they transform extensions. But, I would suppose, neither would he be willing to say that one *can* explain what the quantifiers mean by specifying how they transform extensions. After all, in his view, the concept of "meaning" is extremely problematical.

I am aware that there are philosophers who say that to specify the "truth-theory" for a language is *what it is* to explain the meanings of the sentences of that language. When we discuss the "substitutional interpretation" of the quantifiers, I shall give reasons for rejecting this view of meaning.

"In saying that the so-called objectual interpretation of the quantifier is a correct truth-theory for the language of quantification (even if you have finical reasons for declining to call it an interpretation), you reveal yourself as an 'objectualist' for all practical purposes. And you appear to be attempting to settle the controversial question of the correct truth-theory for the language of quantification by fiat."

If I had nothing to say against the other so-called interpretations of the quantifier that been put forward as rivals to the objectual interpretation (so-called), this would be a very fair complaint. (Although the point would remain that the objectual interpretation cannot allow the truth of sentences formed by prefixing a quantifier to sentences that have no extension.) But I do have a great deal to say against them, and I shall devote the body of this chapter to it. And no serious study of ontology can avoid the question whether the idea of alternative interpretations of the quantifiers makes sense. I will give an example that illustrates this point. An examination of the use of mathematics in the natural sciences has convinced a certain nominalist, Naomi, that any adequate formal reconstruction of our scientific discourse must include sentences from which '$\exists x\ x$ is a number' follows by textbook quantifier logic. If Naomi both accepts this conclusion and remains a nominalist, she has some explaining to do. But there are many things she might say in defense of her position. She might, for example, say something like this:

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[7] Of course any sentence can be assigned an extension by stipulation. But if one does assign an extension to, say, 'the set $x$ is not a member of the set $x$' it will not be the set of all sets that are not members of themselves, there being no such set.

There are, I concede, philosophers who maintain that when one says, "Some sets are not members of themselves" or "For every ordinal number there is a greater," what one says is meaningless unless in uttering these sentences one presupposes a domain of quantification—a particular set of sets, a particular set of ordinals. These philosophers are in the grip of a theory. They ought to reason by *Modus tollens*; they ought to reason that because it is true without qualification that there are sets that are not members of themselves and that for every ordinal there is a greater, that their theory about quantification is false. As George Boolos has said, "ZF (Zermelo-Fraenkel set theory) is couched in the notation of first-order logic, and the quantifiers in the sentences expressing the theorems of the theory are presumed to range over all sets, even though (if ZF is right) there is no set to which all sets belong." ("On Second-Order Logic." The quoted sentence occurs on p. 515.)

For an important discussion of this issue, see Richard Cartwright, "Speaking of Everything." (This essay contains some simply amazing quotations—so they strike me, at any rate—from Dummett and other important philosophers of logic.) Timothy Williamson's "Everything" is also a valuable contribution to our understanding of the role of the concept "domain" in the philosophy of quantification.

> I accept '$\exists x\, x$ is a number' *on the substitutional interpretation of the quantifier*, and I accept '$\sim\exists x\, x$ is a number' *on the objectual interpretation of the quantifier*. The formal analysis of scientific discourse requires the former thesis, and nominalism requires the latter. And these two theses are perfectly consistent.

If there were such a thing as the substitutional interpretation of the quantifier, this might be the germ of a powerful reply to, perhaps a refutation of, the validity of the "meta-ontology" outlined in Chapter I. And there are other views of quantification that could raise similar and no less serious difficulties for this meta-ontology. Let us proceed to examine other ways of looking at quantification than that advocated in Chapter I.

**2.** Rival "interpretations" of the quantifier seem to arise from different ways of looking at problems raised by the logical rule called 'existential generalization' (EG). I will not attempt a precise statement of EG; I will simply note that in most logic texts the rule is stated in some such form as this (or in some more general form of which this would be a special case[8]):

$$\mathrm{Fa} \vdash \exists\beta\, \mathrm{F}\beta$$

(Here 'a' marks the place of a name or other singular referring expression and '$\beta$' the place of a variable.) The rule EG has *prima facie* counterexamples. They are of this type:

1. Zeus was worshiped by the pagan Greeks
   *hence*,
2. $\exists x\, x$ was worshiped by the pagan Greeks.

When one considers these two sentences, one finds it very natural to say that sentence (1) is true and sentence (2) is false (false because nothing satisfies '$x$ was worshiped by the pagan Greeks' or because it is false that something is such that it was worshiped by the pagan Greeks). The things that have been said or might be

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[8] The more general form of the rule is

$$\mathrm{F}\alpha \vdash \exists\beta\, \mathrm{F}\beta$$

where $\alpha$ may be either a name or a variable. In the case in which it is a variable, the general rule allows the inference to an existential quantification only if certain conditions are satisfied—conditions on how that variable was introduced into the deduction in which the inference occurs. These conditions are not relevant to the philosophical points I shall be discussing in the text.

said in response to this *prima facie* counterexample (and to similar *prima facie* counterexamples) to EG are many and various:

(A) Sentence (1) is in fact false, since 'Zeus' does not denote anything. (Granted, we *use* sentences like (1)—and we *regard* (1) and many similar sentences as true, and, e.g., 'Marduk was worshiped by the pagan Greeks' as false. But we regard 'Zeus was worshiped by the pagan Greeks' as true only because we unreflectively use it as if it expressed the same proposition as 'The pagan Greeks believed that certain acts of worship they performed were directed at a personal being who bore the name "Zeus."')

(B) Sentence (1) is in fact false, since names that do not denote on any other account receive a "default" denotation—the number 0, perhaps, or the empty set—and whatever the default denotation for empty terms may be, it was not worshiped by the pagan Greeks. And this is no accident of history. It is not as if there were an object that *might* have been chosen to serve as a default denotation for "otherwise" non-denoting names by Frege (or whomever) and which *was* worshiped by the pagan Greeks.

(C) Sentence (1) is in fact false, or can be seen to be false on analysis, since proper names like 'Zeus' and 'Benjamin Franklin' should be eliminated from our discourse in favor of predicates before we apply the rules of formal logic. The name 'Zeus', for example, should be eliminated in favor of some such predicate as 'is-zeus' or 'zeuses', and sentence (1) should be replaced by, or should be understood as an informal way of saying, something like

$\exists x\ (\forall y\ (y$ zeuses $\leftrightarrow y = x)\ \&\ x$ was worshiped by the pagan Greeks)

or

> At least one thing zeuses and at most one thing zeuses and everything that zeuses was worshiped by the pagan Greeks.

The former sentence logically implies '$\exists x\ x$ zeuses' and is therefore false. The latter is false because it is false that at least one thing zeuses.

(D) The rule EG is, as stated, invalid. It should be replaced by a rule that employs an existence predicate; something like this:

a exists, Fa $\vdash \exists\beta$ F$\beta$.

And the sentence 'Zeus exists' is false.

(E) The rule EG is ambiguous. On one reading it is valid, and on the other invalid. A perspicuous logical notation will make a visible distinction between names that represent themselves as denoting something and names that do not so represent themselves. We might, for example, write “denoting names” as bold-face symbols and their weaker cousins as plain-text symbols. Then the rule of inference

$$\mathrm{Fa} \vdash \exists\beta\ \mathrm{F}\beta$$

is invalid and the rule of inference

$$\mathrm{F}\mathbf{a} \vdash \exists\beta\ \mathrm{F}\beta$$

is valid. Moreover, the sentence ‘**Zeus** was worshiped by the pagan Greeks’ is false (or in some other way objectionable, some way that prevents its figuring in a legitimate counterexample to a rule of inference), owing to the fact that the bold-face name ‘**Zeus**’ falsely represents itself as denoting something.

(F) A distinction must be made between two kinds of quantifier, the ordinary or objectual quantifier, and another. (Or, alternatively, between two interpretations of the quantifier, the ordinary or objectual interpretation and another.) If the quantifier in EG is the objectual quantifier, then EG is invalid, unless some step is taken—as in (B) above—to insure that all names denote something. But if the quantifier in EG is the “other” quantifier, EG is valid without qualification. In particular, the inference from sentence (1) to sentence (2) is valid. (Sentence (2), the conclusion, represents the state of knowledge of someone who has, as we might say, forgotten which gods it was who were worshiped by the pagan Greeks: “Did they worship Baldur, Zeus, Mercury, Baal . . . ? I’ve forgotten, but I do know that they worshiped *some* gods.”[9])

In the remainder of this section, I will consider the suggestion, the essence of option (F), that there is a kind of quantifier such that EG is always and automatically valid if the symbol ‘∃’ that appears in the statement of that rule is a quantifier of that kind. I will consider the substitutional quantifier, or the substitutional interpretation of the quantifier.

According to the objectual interpretation of quantification, the quantifier is an extension-transformer of a certain sort. On the level of syntax, it is a variable-binding operator: ‘$x$’ and ‘$y$’ are free in ‘$x$ loves $y$ and $y$’s aunt’, but ‘$x$’ is not free in ‘$\exists x$ $x$ loves $y$ and $y$’s aunt’, and ‘$y$’ is not free in ‘$\forall y$ $x$ loves $y$ and $y$’s aunt’. The substitutional interpretation agrees with the objectual about the syntactical features of the quantifier (it would hardly be possible to disagree), but not about its semantical features. The substitutional interpretation employs no semantical notion but truth.[10] Since my interest in substitutional quantification is philosophical, not formal, I will not take the trouble to present the substitutional interpretation in its full generality: I will not treat cases of multiple quantification. I will examine only sentences like '$\exists x\ x$ is a dog' and '$\forall y$ (if $y$ is a terrestrial organism and $y$ is not a eukaryote, then $y$ is a eubacterium or $y$ is an archaebacterium)'—sentences consisting of a quantifier-phrase prefixed to a sentence in which only the variable that occurs in the quantifier-phrase is free. In this simple case, the substitutional interpretation of the quantifier may be presented in the form of two semantical statements, two statements of "truth-conditions" for sentences containing the two quantifiers. We begin with two definitions.

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[9] See, for example, the concept of *internal* (as opposed to external) understandings of quantifiers, which is the central idea of Thomas Hofweber’s book *Ontology and the Ambitions of Metaphysics*.

> A *name* is a term that designates or "represents itself as designating" a particular object. (For example: 'George Washington', 'the Archangel Michael', 'Zeus', 'Mr Pickwick', 'the set of all positive integers', 'the set of all ordinal numbers', 'the proposition expressed by the sentence "The world is a progressively realized community of interpretation"', 'the round square cupola on Berkeley College'—but not ')' or 'the square of $z$' or 'who' or 'just one cat' or 'it'.)
>
> A *substitution-instance* of a sentence in which one variable is free is the result of replacing every free occurrence of that variable in that sentence with a name (some one name).

The two semantical statements are:

> For any $\alpha$ and any $F_\alpha$, if $\alpha$ is a variable and $F_\alpha$ is a sentence in which $\alpha$ alone is free, $\ulcorner\forall\alpha\ F_\alpha\urcorner$ is true if and only if every substitution-instance of $F_\alpha$ is true
>
> For any $\alpha$ and any $F_\alpha$, if $\alpha$ is a variable and $F_\alpha$ is a sentence in which $\alpha$ alone is free, $\ulcorner\exists\alpha\ F_\alpha\urcorner$ is true if and only if some substitution-instance of $F_\alpha$ is true.[11]

For example, '$\exists x\ x$ is a dog' is true if and only if, for some name, the sentence obtained by prefixing that name to 'is a dog' is true. (In presenting the substitutional interpretation of the quantifiers, I follow what is in many quarters standard semantical usage and apply the truth-predicate to sentences. In fact, however, in my view the truth-predicate applies in the first instance to propositions, and its application to sentences must be defined in terms of its application to the propositions those sentences express. I shall return to this point in a moment.)

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[10] And perhaps "name." One might debate whether "name" is a semantical notion if names need not have denotations. It is certainly true that even if names need not have denotations, the concept of a name cannot be understood apart from the semantical concept of denotation.

[11] I trust that no reader of this book has anything less a perfect understanding of "Quine corners" or "quasi-quotation marks." But perhaps it won't hurt to mention that these two sentences are shorthand ways of writing 'For any variable, the result of writing "∀" and then writing that variable and then writing a sentence in which that variable alone is free is true if and only if every substitution-instance of that sentence is true' and 'For any variable, the result of writing "∃" and then writing that variable and then writing a sentence in which that variable alone is free is true if and only if some substitution-instance of that sentence is true'.

It is clear that the substitutional and the objectual interpretations may assign different truth-values to a sentence. Suppose, for example, that someone regards 'Fafnir is a dragon' as a true sentence. If that person is right, then '$\exists x$ $x$ is a dragon' is true on the substitutional interpretation. ('Fafnir' is what we are calling a 'name': it represents itself as designating a particular object; that this representation is an imposture does not affect this point.) But, since the extension of '$x$ is a dragon' is empty, it is false on the objectual interpretation.

We have seen the ontological attractions of the substitutional interpretation. Just as '$\exists x$ $x$ is a dragon' might be true on the substitutional interpretation despite the fact that there are no dragons, '$\exists x$ $x$ is a number' might be true on the substitutional interpretation despite the fact (some would suppose it to be a fact) that there are no numbers. This would be the case if 'Six is a number' was true, despite the fact (some would suppose it to be a fact) that 'six' is denotationless, there being no objects of the sort it represents itself as denoting. (Recall the speech made by Naomi the nominalist at the end of the preceding section.)

Another attraction of the substitutional interpretation arises from the fact that there are sentences of ordinary English containing 'some' and 'all' and 'there are' that it seems natural to interpret substitutionally. (And this, I concede, *is* a fact—although I stress the presence of the words 'seems natural to interpret' in the sentence I have used to state this fact.) Here, for example, is a sentence we have already mentioned:

> Some of the gods worshiped by the Greeks were worshiped under other names by the Romans.

It seems natural to suppose that this sentence is true, and is true just in virtue of the fact that sentences like 'Zeus was worshiped by the Greeks and was worshiped under another name by the Romans' and 'Hermes was worshiped by the Greeks and was worshiped under another name by the Romans' are true. I will not discuss sentences of this sort in the present chapter. I record my conviction that they are not to be understood substitutionally. (Since I am about to argue that substitutional quantification is meaningless, I could hardly have any other conviction.) For the little I have to say about how, in my view, they are to be understood, see the discussion in Section 6 of Chapter II of the sentences

> There are gods in the Babylonian pantheon who have no counterparts in the Greek pantheon

and

> Many mythical beings, even if they do not have magical powers, are physically impossible. For example, giants violate the square-cube law, and the amount of air that could be taken in through a centaur's human mouth and nostrils would not provide an animal of that size with sufficient oxygen to support its metabolic processes.

Proponents of the substitutional interpretation recognize that it faces various problems. The most serious of these is thought to be what might be called "the problem of the inadequate supply of names." Consider, for example, mathematical objects. As we have seen, the nominalist will want to deny that there are numbers and will nevertheless want to utter and write such sentences as 'There is a number that can be expressed in more than one way as the sum of two cubes' or 'Between each natural number greater than 1 and its double there is at least one prime'. The availability of the substitutional interpretation seems to show that these desires are compatible if their objects are suitably interpreted. But a moment's reflection shows that the supply of mathematical objects seems to outrun the supply of names—for there are vastly more real numbers than there are natural numbers, and (one would suppose) there are at most as many names—even *potential* names—as there are natural numbers. Some say that this problem finds its solution in the fact that, although it is indeed impossible for *every* real number to have a name—all at once, as it were—it is possible for *any particular* real number to have a name. I myself think that almost every real number $x$ has the following feature: it is impossible for $x$ to have a name.[12] (At least it is impossible unless the name is conferred by God: I doubt whether many of the friends of substitutional quantification will choose to avail themselves of this option.) But I will not argue for this conclusion, for that would entail a lengthy discussion of what is, given our present concerns, a peripheral issue. Another approach to the problem of the inadequate supply of names (at least in respect of names for the real numbers) would be to deny that the problem exists, owing to the fact that all the real numbers *do* have names: infinite strings of '0's and '1's, say. But this approach would be unlikely to appeal to nominalists or any other philosophers with a taste for desert landscapes: whatever such infinite strings may be, they are unlikely to be found among the fauna of any ontological desert. A deeper problem for the proponents of substitutional quantification arises from the fact that mathematical objects of many kinds (of most kinds, in fact) are, so to speak, even more difficult to name than typical real numbers. Consider this sentence (a theorem of set theory with the axiom of choice):

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[12] I am in fact inclined to think that there is a natural number $n$ such that hardly any of the natural numbers smaller than $n$ can be named by a human being. Consider for example, Skewes's Number, at one time the largest finite number to figure in a significant mathematical result. Skewes's Number is $e$ raised to the power ($e$ raised to the power ($e^{79}$))—or, in the convenient "carat" notation *e*^*e*^*e*^79. ($e$ is an irrational number in the vicinity of 2.718.) Skewes's Number lies somewhere in the inconceivably vast desert of integers between 10^10^10^33 and 10^10^10^34. Skewes's Number is obviously not an integer, but we can consider the natural numbers smaller than Skewes's Number. Call the set of natural numbers smaller than Skewes's Number the Range. Say that a natural number is humanly nameable if in some possible world some human being refers to it. Consider the set $H$ of all humanly nameable natural numbers in the Range. In my view, the ratio of the cardinality of the Range to the cardinality of $H$ is an unimaginably huge number; that is, *hardly any* of the numbers in the Range are humanly nameable. "But what about the smallest humanly unnamable number? *I'm* human and I've just named it, so it *isn*'t humanly unnamable. Your description of 'the set $H$' doesn't make sense." A fair point. The problem is that "being humanly unnamable" admits of borderline cases and set membership is sharp. Let's just say that, in my view, if $h$ is a set that is a reasonable or "not bad" candidate for the office "set of all humanly nameable natural numbers in the Range," then the ratio of the cardinality of the Range to the cardinality of $h$ is an unimaginably huge number.

$\exists x$ $x$ is a well-ordering relation on the real numbers.

Can one really suppose that '$x$ is a well-ordering relation on the real numbers' has a true substitution-instance? Not, I think, unless one adopts some such expedient as supposing that each object is its own name—and that expedient is obviously of no use if one's purpose in embracing substitutional quantification is to reduce the scope of one's ontological commitments. (I will remark parenthetically that I find it hard to understand what a "substitution-instance" of an open sentence is if every object is its own name. If that thesis is true, then my cat Sam has two names (at least). One of them is the word 'Sam', and the other one is . . . well, it's a *cat*. I know what it is to substitute a *term* for '$x$' in '$x$ is a quadruped'; I'm not entirely sure that I know what it is to substitute a *cat* for '$x$' in '$x$ is a quadruped'.) It seems reasonably clear that only an infinitesimal fragment of standard mathematics can be retained if the quantifiers in mathematical sentences are understood substitutionally.

I will leave "the problem of the inadequate supply of names" to the friends of substitutional quantification to deal with. I want to discuss a more fundamental problem: substitutional quantification is (or so I shall argue) meaningless. Or perhaps I should state my conclusion more modestly, to wit: If substitutional quantification does have a meaning, no one has ever explicitly said what that meaning is. Let me formulate this thesis more exactly. Let us stipulate that the symbol '$\Sigma$' means just exactly what '$\exists$' is supposed to mean on the substitutional interpretation—that and nothing else. Let us consider a representative sentence that contains this symbol ("the particular quantifier," as the advocates of substitutional quantification like to call it; it and its dual we may call "the substitutional quantifiers"):

$\Sigma$ $\Sigma x$ $x$ is a dog.

If I could understand ($\Sigma$), I could understand substitutional quantification. But I cannot understand this sentence. I cannot understand it because I do not know what proposition it expresses.[13] I do not know what proposition it expresses for this reason: I know nothing relevant to the question ‘What proposition is expressed by (Σ)?’ but the truth-conditions of (Σ). It’s not that I don’t understand these truth-conditions—at least in a rough and ready sort of way. My (main) problem with substitutional quantification is not one of interpreting the truth-conditions of (Σ) and other sentences containing ‘Σ’ (the point I am about to make is perfectly general; it will apply, *mutatis mutandis*, to any sentence containing ‘Σ’ or its dual). It is rather this: I know of a proposition that has just the truth-conditions that are assigned to (Σ), namely

3. There is a name such that the result of replacing the variable ‘$x$’ with that name in the open sentence ‘$x$ is a dog’ is a sentence that expresses a true proposition.

But the friends of substitutional quantification tell me that the proposition that (Σ) expresses is not *that* proposition. Alex Orenstein, for example, in his book *Existence and the Particular Quantifier* (cited in note 2) emphatically denies that “substitutional quantification is a metalinguistic species of objectual/referential quantification.” (*p.* 34*f.*) This denial, I think, places Orenstein in the standard tradition of interpreting substitutional quantification, a tradition that can be traced to Ajdukiewicz (Orenstein, p. 42). I take this tradition to be sufficiently ‘standard’ that anyone who departs from it is proposing a *deviant* use for ‘Σ’.[14] In any case, it is Orenstein’s use of the substitutional quantifier, whether it is standard or deviant, that I am unable to understand: I understand ordinary quantification (just plain quantification; quantification *simpliciter*; quantification *tout court*; quantification period; quantification full stop) over names and predicates as well as the next philosopher.

The friends of substitutional quantification have told me that (Σ) expresses a proposition that, although it is not (3), has the same truth-conditions as (3). And nothing more have they told me. The friends of substitutional quantification insist that substitutional quantifications are not disguised objectual quantifications over words and phrases. I would ask them what they are if that is not what they are.

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[13] The argument I am about to present is couched in terms of propositions—the “saturated assertibles” of Chapter III. I find it natural to speak of the propositions expressed by sentences when I am talking of the meaning of sentences. But the argument of the present section does not depend on the existence of propositions. All that I say using the term ‘proposition’ could be said without using this term. For example, instead of saying that I do not know what proposition ‘Σ$x$ $x$ is a dog’ expresses, I could say that I do not know of a sentence $p$ such that (a) ⌜‘Σ$x$ $x$ is a dog’ means that $p$⌝ is a true sentence, and (b) I understand $p$. That is to say, I do not know of a sentence such that (a) the result of prefixing ‘“Σ$x$ $x$ is a dog” means that’ to it is a true sentence, and (b) I understand it.

[14] I concede that some writers do appear to assert that substitutional quantifications are to be interpreted as objectual quantifications over linguistic items. For example, Susan Haack, in the book cited in note 2, states the “substitutional interpretation” of the existential quantifier in these words (p. 42):

> ‘$(\exists x)Fx$’ is interpreted as ‘At least one substitution-instance of “F...” is true’.

But I think that the most probable explanation for this statement is that Haack was expressing herself loosely.

Let us say that a *metalinguistic* sentence is a sentence that either "quantifies over" linguistic items (words, phrases, sentences, logical or mathematical symbols) or contains terms that refer to linguistic items. Let us say that a non-metalinguistic sentence $N$ is the *non-metalinguistic counterpart* of a metalinguistic sentence $M$ if $N$ stands to $M$ in the relation that is illustrated by the way the non-metalinguistic sentence in each of the following non-metalinguistic/metalinguistic pairs is related to the metalinguistic sentence with which it is paired:

> Rome is a populous city
> ‘Rome’ denotes an object that satisfies the open sentence ‘$x$ is a populous city’
>
> Something is a dog
> Something satisfies the open sentence ‘$x$ is a dog’.

It *may* be that sentence (3) has non-metalinguistic counterparts, but I do not know of any. That is to say: I have no idea what ‘$\Sigma x\, x$ is a dog’ means. True, ‘$\Sigma x\, x$ is a dog’ is *supposed to* be a non-metalinguistic counterpart of (3) but one can't make a sentence fall into a certain semantic category simply by declaring that it belongs to that category. ‘$\Sigma x\ x$ is a dog’ can't be a non-metalinguistic counterpart of (3) if (3) *has* no non-metalinguistic counterparts, and I see no reason to suppose it has any.[15]

Since philosophers have rarely found this line of argument, convincing, let me try a different line—an intuition pump, I suppose one could call it.

Suppose I were to "introduce" a variable-binding operator ‘$\bigwedge$’ by saying this and nothing more:

> For any variable $\alpha$ and any sentence $F$,
> $\ulcorner \bigwedge \alpha F \urcorner$ is true if and only if $\ulcorner \forall \alpha F \urcorner$ is true
> and
> ‘$\bigwedge$’ means something different from ‘$\forall$’ and $\ulcorner \bigwedge \alpha F \urcorner$ means something different from $\ulcorner \forall \alpha F \urcorner$.

Would you then know what ‘$\bigwedge$’ and, e.g., ‘$\bigwedge x$ ($x$ is a dog → $x$ is a quadruped)’ meant? No, you would not. You would have *no idea* what those items meant.[16]

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[15] For another version of this argument, see my "Why I Don't Understand Substitutional Quantification."

[16] You would know that the dog/quadruped sentence was *true* if meaningful, but you would not know whether it was meaningful, or, if it was meaningful, what it meant (you would know that if it expressed any proposition at all, the proposition it expressed was true, but you would not know whether it expressed any proposition, nor would you know whether, if it did express a proposition,

To repeat: I have no idea what ‘$\Sigma x$ $x$ is a dog’ means. And nor do I have any idea what any other ‘$\Sigma$’ sentence means. And neither, I make bold to say, does anyone else.

The reader will perhaps have noted that what has been attacked in this section is not merely substitutional quantification. It is the idea that extensional semantics can be used to explain the meaning of, or supply a meaning for, any symbol, word, or idiom.[17] This idea was implicit in my contention in the previous section that the objectual interpretation of the quantifier was not an interpretation of the quantifier. If the *only* explanation of the meaning of ‘$\exists$’ that had ever been given was of this form: ‘To prefix this symbol and a variable to a sentence in which that variable is free is to produce a sentence in which that variable is not free, and whose extension is the following function of the extension of the original sentence…’, I should not be able to understand the sentence ‘$\exists x$ $x$ is a dog’—and neither would you. It would fail to express a proposition, because no one would ever have specified a proposition for it to express.

The objectual interpretation of the quantifiers and the substitutional interpretation each faces its own “little” problem, and each faces the same “big” problem. (The little problem for the objectual interpretation is this: not every sentence to which a quantifier-phrase can be meaningfully prefixed has an extension. The little problem for the substitutional interpretation is this: the supply of potential names is too small.) The big problem is this: neither interpretation is in fact an interpretation. Nevertheless, my message is not “a plague o’ both your houses.” Or, at least that is so only in a very technical sense, the same technical sense as that in which the logical positivist says “a plague o’ both your houses” to the theist *and* the atheist. I say, remember, that there is only one quantifier-variable idiom, and the objectualist has specified the correct truth-conditions for those sentences in this idiom that are ultimately built upon sentences that have an extension. The substitutionalist, however, has given the correct truth-conditions for nothing—or for nothing other than a few sentences that make up an entirely arbitrary fragment of the whole class of quantifier-variable sentences, sentences like ‘$\exists x$ ($x$ is a name and ⌜$x$ is a dog⌝ is true)’. And the objectualist has, without specifically mentioning the application of the quantifier to linguistic items, given a correct statement of the truth-conditions for sentences of this kind: *this* one, for example, is true just in the case that ‘$x$ is a name and ⌜$x$ is a dog⌝ is true’ has a non-empty extension.

Before leaving the topic of substitutional quantification, I will say something about an approach to the problem of explaining its meaning that differs from that of the philosophers I have been criticizing. The advocates of this second approach

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what proposition it expressed). And that’s certainly possible: I know (on the basis of testimony) that the proposition expressed by the sentence ‘Satisfactory recursive numerical algorithms exist for summing tree-level Feynman diagrams’ is true, but I have no idea what the sentence means.

[17] For a brilliant critique of the “Davidsonian thesis”—that a truth-theory is a meaning theory—see W. G. Lycan, “Semantic Competence and Funny Functors.”

do not propose to explain the meaning of substitutional quantification by providing truth-conditions for sentences containing substitutional quantifiers. They rather provide just what I have demanded: a systematic method of eliminating substitutional quantification from our discourse.[18] These philosophers propose to regard existential (or particular) quantifications on a predicate as disjunctions—disjunctions that include as disjuncts every substitution-instance of that predicate. That is, for any variable α and any predicate *F*, they propose to regard $\ulcorner \Sigma\alpha\ F\alpha \urcorner$ as an abbreviation for the disjunction of all substitution-instances of $\ulcorner F\alpha \urcorner$. (Universal quantifications on a predicate are to be understood in the parallel way as conjunctions.) But this proposal has odd results if there are as many names as there are natural numbers—and there certainly are that many names, for the standard "decimal" names for the natural numbers ('1', '17', '1029'...) are as numerous as the natural numbers. For the sake of the example, let us suppose that those names are the only names there are. Then

$\Sigma x\ x$ is odd

is equivalent, on this proposal, to

0 is odd ∨ 1 is odd ∨ 2 is odd ∨ ... $k$ is odd ∨ ....

This proposal, or so one might say, *does* inform the person who wants to know what the meaning of 'Σ' is what proposition it is that is expressed by '$\Sigma x\ x$ is odd'; it *does* tell one how to translate this sentence into language one already understands. So one might say. But if one does say this, one seems to be employing the premise that there are infinitely long sentences, sentences that have no end. And this is very hard to believe. And matters seem, if possible, to become even worse when we consider open sentences whose variables are bound by more than one quantifier. Suppose that the dual of 'Σ' is 'A'. Consider the sentence

$\mathrm{A}x\ \Sigma y\ y > x.$

This sentence will be an abbreviation for an unending conjunction of unending disjunctions:

$(0 > 0) \vee (1 > 0) \vee (2 > 0) \vee \ldots (k > 0) \vee \ldots$
&
$(0 > 1) \vee (1 > 1) \vee (2 > 1) \vee \ldots (k > 1) \vee \ldots$
&

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[18] See, for example, Dale Gottlieb, *Ontological Economy: Substitutional Quantification and Mathematics.*

$(0 > 2) \vee (1 > 2) \vee (2 > 2) \vee \ldots (k > 2) \vee \ldots$
&
.
.
.
$(0 > j) \vee (1 > j) \vee (2 > j) \vee \ldots (k > j) \vee \ldots$
&
.
.
.

It really is very hard to believe that there are such sentences as these. (Note that if we were to continue this plan for writing "initial bits" of the unabbreviated sentences. the "sentence" of which '$\mathrm{A}x\Sigma y\mathrm{A}z\mathrm{A}w\ (x < y \leq yzw)$' is an "abbreviation" would be a four-dimensional array of symbols.) We do not, of course, have to proceed very far up the set-theoretical hierarchy to find objects with which, e.g., infinite conjunctions of infinite disjunctions may be "identified." But if the purpose of substitutional quantification is to be an instrument of ontological economy, it is not easy to see how this purpose is aided by identifying such an apparently simple thing as the sentence '$\mathrm{A}x\ \Sigma y\ y > x$' with an infinite sequence of infinite sequences.

Even if one does not share my scruples about the existence of such sentences, one must admit that the advocates of the proposal we are considering must solve some difficult technical problems. It is not enough to say that '$\mathrm{A}x\ \Sigma y\ y > x$' abbreviates an infinite conjunction of infinite disjunctions; one must also devise an algorithm that—in the present case—takes '$\mathrm{A}x\ \Sigma y\ y > x$' and yields a finite display (no doubt containing a lot of '*j*'s and '*k*'s and lots of '...'s) that uniquely represents the of course unwritable "doubly infinite" sentence that '$\mathrm{A}x\ \Sigma y\ y > x$' supposedly abbreviates. One would then have to devise explicit rules of inference (corresponding to UI, EG, and so on) for manipulating the finite displays the translation algorithm yields. One would, finally, have to present a proof that the display the algorithm correlates with a sentence Q in the language of quantification is a theorem of the "new" system if and only if Q is a theorem of substitutional quantifier logic. Devising such a translation algorithm, such a set of rules, and such a proof, will present a considerable technical challenge. But let us suppose that this challenge can be met. (I am no logician, but my guess is that it can be.) Even if it can be, and even if there are "multiply infinite sentences," I do not *understand* any of them, for I can understand only finite sentences. And if the only thing that can be said about the meaning of '$\mathrm{A}x\ \Sigma y\ y > x$' is that it abbreviates a certain (specifiable) "doubly infinite" sentence, I shall therefore not understand '$\mathrm{A}x\ \Sigma y\ y > x$'. This point does not essentially involve the infinite length of the unabbreviated sentences. Essentially the same point could be made about very long finite sentences. Suppose someone proposes to use the sentence 'The natural numbers less than 1,000 are even-odd' as an abbreviation for '0 is even and 1 is odd and 2 is even and 3 is odd and... 999 is odd'. (Of course, the fifty-odd-keystroke display '0 is even and 1 is odd and 2 is even and 3 is odd and... 999 is odd' is itself an abbreviation. I ask you to imagine that the previous sentence contains not the quotation name of that abbreviation but the quotation name of—so to speak—the whole thing.) Although I believe that the unabbreviated sentence exists, and although I believe that it is true, I cannot understand it (for more or less the same reason as the reason why I cannot visualize a chiliagon: I can't "get it into my mind"), and I therefore have no understanding of the sentence that abbreviates it. My contention that I cannot understand '0 is even and 1 is odd and 2 is even and 3 is odd and... 999 is odd' should not be confused with the contention that I cannot understand '0 is even and any number less than 1,000 is odd if it is the successor of an even number, and is even if it is the successor of an odd number'. That sentence I *can* understand. But then that sentence contains only thirty-two words: the sentence I cannot understand contains 3,999 words. I recognize, moreover, that the sentence '0 is even and 1 is odd and 2 is even and 3 is odd and... 999 is odd' is a perfectly meaningful English sentence and that it is true. But to say that is not to say that I understand it.

**3.** Some philosophers believe in a kind of quantification they call "propositional quantification." The following is a typical formula that contains a "propositional quantifier":

$$\forall p\ (p \lor {\sim}p).$$

This formula is supposed not to be equivalent to

$$\forall x\ (x \text{ is a proposition} \rightarrow.\ x \text{ is true} \lor {\sim}x \text{ is true})$$

or to

$$\forall x\ (x \text{ is a sentence} \rightarrow \text{the alternation of } x \text{ with the negation of } x \text{ is true}),$$

for the "variable" '*p*' is supposed to have the syntactical features of a sentence, and not, like '*x*', the syntactical features of a term or name. It occupies a sentential, not a nominal, position. I prefer, therefore, when discussing this sort of quantification, *not* to call it propositional quantification. I prefer to call it *sentential* quantification—to oppose nominal and sentential quantification. I prefer, moreover, to speak of sentential (not propositional) quantifiers and sentential (not propositional) variables.

More generally, the advocates of sentential quantification hold, no sentence in which a quantifier binds sentential variables is equivalent to a sentence whose bound variables occupy nominal positions.[19]

One might be tempted to suppose that sentential quantification was a species of substitutional quantification. That is, one might suppose that the advocates of sentential quantification would explain its meaning as follows (let us not go into the complications required by multiple quantification; let us consider only the single-variable case):

$$\forall p \, (\ldots p \ldots)$$

(where '$\ldots p \ldots$' represents any sentence in which no variable but '$p$' is free) is true if and only if every substitution-instance of '$\ldots p \ldots$' is true.[20] For example, '$\forall p \, (p \vee {\sim} p)$' is true because 'Snow is white ∨ ~snow is white' is true, and 'Arsenic is wholesome ∨ ~arsenic is wholesome' is true…and so on. And some have so understood sentential quantification. But, as we shall see, there are other accounts of sentential quantification, ones that are not affected by the arguments we have brought against the intelligibility of substitutional quantification.

However sentential quantification is to be explained, it is not hard to understand why philosophers should find it attractive, for it is of great philosophical utility. Its main utility is that it provides a generalization of sentences like 'The proposition that arsenic is wholesome is true if and only if arsenic is wholesome', and if such a generalization is possible, an explicit definition of truth is possible:

$$x \text{ is true } =_{df} \exists p \, (x = \text{the proposition that } p \;.\; \& \; p).$$

A second reason that many philosophers are attracted to sentential quantification is that it seems to provide a way to avoid the ontological commitment to propositions that is threatened by quantification *over* propositions. Let us revisit the nominalist Naomi, whom we briefly encountered in Section 1. Suppose Naomi has been convinced by examples like 'Some of the things Nixon asserted on Tuesday contradicted some of the things Dean asserted on Wednesday' that some sort of "propositional generalization" is an ineluctable feature of our discourse. Being a nominalist, however, she denies the existence of propositions. She does not, therefore, want to explain the fact that 'Some of the things Nixon asserted on

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[19] We must therefore be careful to distinguish sentential quantification from nominal-variable quantification over sentences (and from nominal-variable quantification over propositions). For the origins of sentential quantification, see the descriptions of "protothetic" in the entries "Stanisław Leśniewski," "Lvov-Warsaw School," and "Jan Łukasiewicz" in the *Stanford Encyclopedia of Philosophy*.

[20] We extend the notion "substitution-instance" in the obvious way to apply to variables in sentential positions.

Tuesday contradicted some of the things Dean asserted on Wednesday' (which, she admits, must be in some sense true) logically entails 'Nixon asserted at least one thing on Tuesday' in anything like the following way:

> 'Some of the things Nixon asserted on Tuesday contradicted some of the things Dean asserted on Wednesday' is equivalent to '$\exists x$ $\exists y$ (Nixon asserted $x$ on Tuesday and Dean asserted $y$ on Wednesday and $x$ is inconsistent with $y$)'; 'Nixon asserted at least one thing on Tuesday' is equivalent to '$\exists x$ Nixon asserted $x$ on Tuesday'; '$\exists x$ Nixon asserted $x$ on Tuesday' is a formal consequence of '$\exists x$ $\exists y$ (Nixon asserted $x$ on Tuesday and Dean asserted $y$ on Wednesday and $x$ is inconsistent with $y$)'.

She does not want to explain this fact in this way because, being a nominalist, she does not believe that anything satisfies such open sentences as 'Nixon asserted $x$ on Tuesday' and '$x$ is inconsistent with $y$'.[21] Suppose, therefore, that she makes the following speech:

> The appropriate formal apparatus for representing the kind of generality expressed by sentences like 'Some of the things Nixon asserted on Tuesday contradicted some of the things Dean asserted on Wednesday' is that of sentential quantification, not that of nominal quantification. For example, the appropriate translation of the Nixon-Dean sentence into the language of formal quantification is: '$\exists p$ $\exists q$ (Nixon asserted that $p$ on Tuesday and Dean asserted that $q$ on Wednesday and it is not possible that ($p$ and $q$))'. This sentence is consistent with '$\sim\exists x$ $x$ is a proposition' and '$\sim\exists x$ $x$ is a sentence-type' and with all the other '$\sim\exists x$'-sentences that we nominalists endorse.

It is important to keep in mind that the two motivations for accepting the intelligibility of sentential quantification (the desire for a "redundancy" or "minimalist" or "deflationary" theory of truth[22] and the desire to avoid ontological commitment to propositions and sentence-types) are independent. Philosophers—if there are any—who believe both that there are such things as propositions (non-linguistic bearers of truth-value) and that quantification into sentential positions is intelligible, might well combine quantification into nominal and into sentential positions to provide a redundancy theory of the truth of propositions. This one, perhaps:

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[21] A nominalist like Naomi should be no more willing to concede the existence of sentence-types than she is the existence of language-independent propositions. I leave the resolution of this difficulty to the nominalists.

[22] I will not attempt to draw any distinctions among the terms 'redundancy theory of truth', 'disquotational theory of truth', and 'deflationary theory of truth'. In what follows in the text, I will always use 'redundancy theory of truth', but not because I have any philosophical reason to prefer this term to the other two.

$$\forall x\ (x \text{ is a proposition} \rightarrow .\ x \text{ is true} \leftrightarrow \exists p\ (p\ \&\ x = \text{the proposition that } p)).$$

The first of the two motivations is the more important. Sentential quantification is almost always discussed in connection with the project of providing a theory of truth. (This fact provides one of the more important motivations for denying that sentential quantification is a species of substitutional quantification. As we have seen, the "substitutionalist" explains the meaning of '$\forall p$ (it is true that $p. \leftrightarrow p$)' as follows: this sentence is true just in the case that every substitution-instance of 'it is true that $p. \leftrightarrow p$' is true. But the redundancy theory of truth is an eliminativist project: it aims at showing how, in principle, to eliminate 'true' from our discourse. And if one is a redundancy theorist who accepts a substitutional account of sentential quantification, one will find it awfully difficult to find a way to find a sentence that does not contain the predicate 'is true' with which to replace the right-hand constituent of the biconditional.

$$\forall p\ (\text{it is true that } p. \leftrightarrow p) \leftrightarrow \forall x\ (x \text{ is a declarative sentence} \rightarrow \ulcorner\text{it is true that } x. \leftrightarrow x\urcorner \text{ is true}).^{23}$$

But that project is not my topic. I shall be concerned only with the question of the intelligibility of sentential quantification, and I shall pay no further attention to the question whether sentential quantification can be used to provide a theory of truth. (I will remark, however, that I see only one barrier to a redundancy theory of truth—namely that sentential quantification is unintelligible. Some philosophers seem to be willing to accept the intelligibility of sentential quantification, but unwilling to accept a redundancy theory of truth. I haven't been able to grasp their point. If sentential quantification were intelligible—and if it could be explained without an appeal to the concept of truth—, 'true' and 'truth' would be eliminable from our discourse by paraphrase,[24] and, it seems to me, to be able to eliminate all occurrences of these words from our discourse by paraphrase would be to be in possession of an absolutely *ideal* theory of truth.[25])

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[23] There is, of course, the second way of explaining substitutional quantification. Perhaps sentential quantification can be seen as a species of substitutional quantification if substitutional quantification is so understood.

[24] In this way: eliminate 'truth' in favor of 'it is true that $p$' and '$x$ is true'; eliminate 'it is true that $p$' by appropriate applications of the generalization '$\forall p$ (it is true that $p. \leftrightarrow p$)'; eliminate '$x$ is true' by appropriate applications of the generalization '$\forall x\ (x \text{ is true} \leftrightarrow \exists p\ (p\ \&\ x = \text{the proposition that } p))$'.

[25] This topic is discussed at length in my essay "Generalizations of Homophonic Truth-sentences."

How is sentential quantification to be understood if not as a species of substitutional quantification? I will examine the most important non-substitutionalist attempt to explain sentential quantification: that of Dorothy Grover.[26]

Recognizing that the "variables" of nominal quantification are essentially pronouns, and that a proper understanding of nominal quantification must proceed from this fact, Grover proposes that the variables of sentential quantification—the '*p*'s and '*q*'s that occupy sentential positions and are bound by sentential quantifiers—be understood in an exactly parallel way: as formal versions of words or phrases of a kind she calls "prosentences," items that stand to sentences as pronouns stand to nouns. It is, however, of at most heuristic value to say, "Prosentences are items that stand to sentences as pronouns stand to nouns." Some sort of definition is required. Initially, Grover defined 'prosentence' by providing a list of three defining properties: a prosentence is any word or phrase that has these three properties

> It is not a sentence but has the syntactical properties of a sentence
>
> It can be used to make an assertion, serve as the antecedent of a conditional assertion, and can, in general play all the linguistic roles a sentence can play. (Can with the help of context, that is. This is parallel to the case of pronouns and nouns: a third-person-singular pronoun—'it'—can be used to refer to an object, but it must pick up its referent from the context in which it is used.)
>
> It can be used anaphorically—that is, it can have antecedents, and different occurrences of a prosentence in the same sentence can have the same antecedent.

Initially, Grover was doubtful whether there were any prosentences in English. She noted, however, Joseph Camp's suggestion that 'it is true' might be a prosentence—for it seems to have just the properties in Grover's list—and in later[27] writings she came to endorse it.

The concept of a prosentence, then, has been defined by a list of properties: a linguistic item is a prosentence if and only if it has the three listed properties. But what reason have we to believe that anything has all the properties in the list or even that those properties are mutually consistent? We need some reason to believe that prosentences exist, or at least that the defining properties of a prosentence are consistent. (If the defining properties of a prosentence are consistent, then, presumably it is possible to add artificial prosentences to any language.) I, at any rate, am sufficiently skeptical about the linguistic category "prosentence" that I should want to see an argument for the conclusion that the defining properties of prosentences were consistent before I was willing to accept any theory that made essential use of this category. I know of no other way to show that the list of defining properties of prosentences are consistent than to provide an example of a prosentence.

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[26] The following discussion of Grover's work is based on her book, *A Prosentential Theory of Truth.*

[27] Various parts of *A Prosentential Theory of Truth* had been separately published at various times before they were put together to form a book.

What about Camp's 'it is true'? Will it do? To begin with, even if we have a prosentence, we shall have to have some way of connecting its occurrences in a sentence with their intended antecedents if we are to be able to understand the sentences that contain arbitrarily many sentential quantifiers and arbitrarily many sentential variables. In Chapter I, I solved the analogous problem for 'it' by supplying 'it' with an indefinite stock of subscripts. But a "prosententialist" who proposes to use subscripts to mark the intended antecedents of occurrences of 'it is true' will face a problem that I did not face: where the subscripts are to be placed in the phrase 'it is true'. This problem arises because 'it is true' (unlike 'it') has a grammatical structure, and thus affords more than one "site" at which a subscript might be placed. There seem to be two serious candidates for the placement site for the subscript, which we may illustrate as follows:

$\text{it}_{\text{p}}$ is true

and

$(\text{it is true})_{\text{p}}$.

That is, we might attach the subscript to the (apparent) grammatical subject of the prosentence-candidate, or we might attach it to the prosentence-candidate "as a whole." (To attach it to the copula would seem to be simply a variant on the second option: to attach it to the copula would be a way of attaching it to 'it is true' "as a whole"; after all, the copula in a subject-predicate sentence is a mere grammatical convenience, one that many languages manage very nicely without. And I can't see what could be intended by attaching a subscript to 'true'.)

Let us suppose that we have chosen the first option: we will attach our subscripts to 'it'. Are we now in a position to translate (say) '$\forall p\ (p \vee {\sim}p)$' into "philosopher's English"? (If we cannot succeed in this simple "one-variable" case, there will be no point in proceeding to more complex examples.) Well, we know how to translate '$p \vee {\sim}p$':

$\text{it}_{\text{p}}$ is true $\vee$ ${\sim}\text{it}_{\text{p}}$ is true.

But how are we to translate '$\forall p$'? How are we to translate the whole sentence '$\forall p\ (p \vee {\sim}p)$'? Someone might offer:

For all $p$ ($\text{it}_{\text{p}}$ is true $\vee$ ${\sim}\text{it}_{\text{p}}$ is true).

But that suggestion is unsatisfactory, for it leaves us with a residual, untranslated variable in the quantifier-phrase. But what expression could we use in place of 'For all $p$'? How, that is, are we to write the quantifier-phrase so that it contains not '$p$' but rather contains a word with the subscript 'p'. (Note that in the account of "nominal" quantification in Chapter I, quantifier-phrases—'everything$_z$ is such that', 'something$_y$ is such that'… —do not contain '$z$' or '$y$'.) I do not see any way to do this. It is, of course, easy enough to attach a 'p'-subscript to one of the words in an expression we identify as a universal sentential quantifier-phrase and which we prefix to 'it$_p$ is true $\vee$ ~it$_p$ is true'. For example,

Everything$_p$ is such that (it$_p$ is true $\vee$ ~it$_p$ is true).

But this way of writing a universal sentential quantifier-phrase would seem to leave us with good, old-fashioned nominal quantification. The meaning of a sentence containing subscripted pronouns can hardly be supposed to depend on the particular symbols that are employed as pronoun-subscripts.[28] This sentence, therefore, is equivalent to

Everything$_x$ is such that (it$_x$ is true $\vee$ ~it$_x$ is true).

And if we abbreviate this expression by the method given in Chapter I, that is:

—at each place a subscripted 'it' occurs, delete the word 'it', italicize its subscript, and raise it to the line

—abbreviate 'everything$_x$ is such that (…)' as '$\forall x$ (…)'—and similarly for the other variables

—abbreviate 'something$_x$ is such that (…)' as '$\exists x$ (…)'—and similarly for the other variables,

we obtain,

$\forall x$ ($x$ is true $\vee$ ~$x$ is true).

So interpreted, the language of prosentential quantification seems to be no more than a rewriting of the language of nominal quantification over propositions—or, at any rate, nominal quantification over objects of whatever sort it is that satisfy '$x$ is true'. And a rewriting of only a *part* of this language, for there is nothing in the language of sentential quantification that corresponds to the identity sign. For this reason, there are things that can be said by those who are willing to quantify over propositions that cannot be said by those who restrict themselves to that part of the language of quantification over propositions that can be translated into the language of sentential quantification. For example: 'For any contingent proposition, there is some distinct contingent proposition that it entails'.[29]

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[28] Cf. the principle of the equivalence of alphabetic variants in formal logic.

Perhaps, however, these untoward results are a consequence of the fact that we chose to attach the differentiating subscript to 'it' in 'it is true', thus (it might be argued) forcing 'it' to behave as a pronoun, contrary to the intention of the proponents of sentential quantification that 'it' should be an inseparable part of the prosentence 'it is true'. Let us now turn to the other option we mentioned. Let us suppose that the differentiating subscripts are to be attached to the prosentence-candidate "as a whole," that is, in the following fashion:

(it is true)$_{\mathrm{p}}$
(it is true)$_{\mathrm{q}}$.

(In the following discussion of this suggestion, I will drop the brackets; but it must be understood that throughout this discussion the 'p'- and 'q'-subscripts apply to 'it is true' and not simply to the adjective 'true'.) Then the above objections have no force against the idea of understanding sentential-position variables as prosentences. But we are still faced with the problem of how we are to formulate sentential quantifier-phrases.

Let us pose the problem this way. Consider the formula

$$\forall p\ (p \vee {\sim}p).$$

How is the whole of this formula to be turned into English—or into a supplemented English that contains phrases like 'it is true$_{\mathrm{p}}$' and 'it is true$_{\mathrm{q}}$'? That is to say, with what expression of generality may we prefix

it is true$_{\mathrm{p}}$ or it is not the case that it is true$_{\mathrm{p}}$

so as to produce something that (a) is a sentence of (supplemented) English, and (b) seems intuitively to express what is supposed to be expressed by '$\forall p\ (p \vee {\sim}p)$'?

Grover generally uses the following as a universal quantifier-phrase: 'for any proposition'. (Thus, she might offer 'For any proposition, it is true or it is not the case that it is true' as an English reading of '$\forall p\ (p \vee {\sim}p)$'. Let us leave aside the possible objection that this *looks* a lot more like an English reading of '$\forall x$ ($x$ is a proposition → (*x* is true ∨ ~*x* is true))' than an English reading of '$\forall p\ (p \lor {\sim}p)$'. How something looks is, after all, a matter of subjective judgment.) This quantifier-phrase will do only in the simplest cases, the one-sentential-variable cases. Since it offers no way of distinguishing one universal quantifier-phrase from another or one existential quantifier-phrase from another, it will not do in cases involving multiple generality. We have to be able to distinguish, say,

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[29] I mention this only as a problem. It might be possible to solve this problem by introducing some "sentential counterpart" of '='—something that does the work in respect of sentential quantification that '... and ... are propositions & ... = ...' does in respect of nominal quantification and has the syntax of a sentential connective. Suppose the symbol is '$=_{\Pi}$'. One might consider such definientia for '$p =_{\Pi} q$' as '$\Box(p \leftrightarrow q)$' or 'necessarily, to assert that $p$ would be to assert that $q$, and vice versa'.

$$\forall p \exists q\ (p\ \&.\ q \rightarrow q)$$

from

$$\forall q \exists p\ (p\ \&.\ q \rightarrow q).$$

And, obviously, some substitution-instances of '$\exists q\ (p\ \&.\ q \rightarrow q)$' are false—'$\exists q\ (2+2=5\ \&.\ q \rightarrow q)$', for example. But all substitution-instances of '$\exists p\ (p\ \&.\ q \rightarrow q)$' are true: both '$\exists p\ (p\ \&.\ 2+2=5 \rightarrow 2+2=5)$' and '$\exists p\ (p\ \&.\ 2+2=4 \rightarrow 2+2=4)$' are true.

The lesson is: 'For any proposition there is a proposition' does not enable us to distinguish '$\forall p \exists q$' from '$\forall q \exists p$'. We need some device that will connect '*p*'-quantifier-phrases with particular occurrences of '*p*'-prosentences and some device that will connect '*q*'-quantifier-phrases with particular occurrences of '*q*'-prosentences. There is always, of course, the "brute force" method:

> For any proposition$_\mathrm{p}$, there is a proposition$_\mathrm{q}$ such that (it is true$_\mathrm{p}$ &. it is true$_\mathrm{q}$ → it is true$_\mathrm{q}$)
>
> For any proposition$_\mathrm{q}$, there is a proposition$_\mathrm{p}$ such that (it is true$_\mathrm{p}$ &. it is true$_\mathrm{q}$ → it is true$_\mathrm{q}$)

But, really, what do these sentences *mean*? We might try to make sense of them by supplementing English with lots of exact synonyms for 'proposition', perhaps by the ever-useful "subscript" method: 'proposition$_\mathrm{p}$', 'proposition$_\mathrm{q}$', and so on. Would this serve to establish an intelligible connection between quantifier-phrases and the sentential-position variables they are supposed to bind? I think not. By way of illustration, let us suppose that 'proposition' and 'thesis' are exact synonyms. And let us suppose that 'it is true$_\mathrm{proposition}$' and 'it is true$_\mathrm{thesis}$' are distinct prosentences—and that an antecedent of an occurrence of the former must be an occurrence of 'proposition' and an antecedent of an occurrence of the latter must be an occurrence of 'thesis'. And we might go on to say that '$\forall p \exists q\ (p\ \&.\ q \rightarrow q)$' was an abbreviation of

> For every proposition, there is a thesis such that (it is true$_\mathrm{proposition}$ &. it is true$_\mathrm{thesis}$ → it is true$_\mathrm{thesis}$)

and that '$\forall q \exists p$ ($p$ &. $q \rightarrow q$)' was an abbreviation of

> For every thesis, there is a proposition such that (it is $\text{true}_{\text{proposition}}$ &. it is $\text{true}_{\text{thesis}}$ → it is $\text{true}_{\text{thesis}}$).

But I confess that these two sentences make little sense to me. (Well, to be frank, no sense at all.) 'Proposition' and 'thesis' both have meanings (even if their meanings are the same): they are not mere indices. It seems to me to be absurd to suppose that these two sentences are sentences of a transformed, regimented English between which there is a clear difference of sense (or even an inchoate difference of sense that one might have some hope of making explicit and precise).

Let us return to the question we have posed and to which we have so far failed to find an answer: with what expression of generality may we prefix

> it is $\text{true}_{\text{p}}$ or it is not the case that it is $\text{true}_{\text{p}}$

so as to produce something that (*a*) is a sentence of (supplemented) English, and (*b*) seems intuitively to express what is supposed to be expressed by '$\forall p$ ($p \vee {\sim}p$)'? It should be evident from the foregoing that any prefix that satisfies these conditions will have to contain 'it is $\text{true}_{\text{p}}$'. But let us make things as easy as possible for ourselves. Let us take a step backward and neglect the subscripts; let us ask this question with respect to 'it is true or it is not the case that it is true'. (If we can find no answer in this case, there will be no point in going on to consider multiple generalization.) I will examine two possible answers. (In each case, I will write out the whole sentence and italicize the suggested prefix.)

> *Under whatever circumstances it is true*, it is true or it is not the case that it is true.

But this cannot be right. For one thing, it doesn't make sense, or doesn't make sense except unless 'it' (which stubbornly insists on behaving as if it were a pronoun and the subject of the verb 'is') can pick up a referent from its context. "Under whatever circumstances *what* is true?," one wants to ask. For another, if this suggestion confers truth on '$\forall p$ ($p \vee {\sim}p$)', it seems to be just as happy to confer truth on '$\forall p\ p$'—for if one does manage to assert something by saying, "Under whatever circumstances it is true, it is true," what one manages to assert will certainly be true.

The second possible answer is,

> *Whether it is true or not*, it is true or it is not the case that it is true.

This suggestion perhaps does not confer truth on '$\forall p\ p$':

> Sally: Tom, I don't see how you can say Lord Copper is never wrong. He insists that Yokohama is the capital of Japan. He won't admit he's wrong. He says it over and over.
>
> Tom: Whether it's true or not, it's true.

Tom, I take it, has said something false. Nevertheless, the first problem is not solved by this suggestion, and that is no surprise, for it has no solution. The word 'it' insists on behaving like what it is: an ordinary pronoun, and, if a sentence that begins 'Whether it is true or not...' is uttered in a context that fails to supply the 'it' it contains with a referent, the person to whom it is addressed is going to want to ask, 'Whether *what* is true or not?'

In the end, it seems that we do not have to go on to determine whether any suggestion along the present lines can be elaborated to solve the problem of multiple generality. Any such suggestion must fail even in the simplest case. The English replacement for the sentential quantifier-phrase "$\forall p$" must contain "it is true" if it is to interact in the appropriate way with the sentences to which it is prefixed (sentences in which 'it is true' occurs and allegedly functions as a prosentence). And in any such replacement, the phrase 'it is true' will stubbornly behave not like a syntactically structureless unit but like what it is: a phrase having a subject-copula-predicate structure. And any utterance of a sentence that starts with this replacement will therefore constitute an assertion only if the 'it' occurring in the replacement manages somehow to pick up a referent from the context of the utterance.

'It is true' is either a prosentence or it is not. If it is not, we are left without an example of a prosentence and are thus left without any reason to suppose that Grover's list of properties is consistent—without any reason to suppose that "prosentence" is a possible grammatical category. (It may be that there are prosentences hiding somewhere in the jungle of natural language. But if there are natural-language prosentences, I have no idea what they might be.) If it is, then prosentences cannot *per se* be used to make sense of sentential quantification: they cannot be bindable variables, for binding is done by quantifiers, and there are no quantifiers to bind them. (Or so it seems to me. I suppose I must concede that there *may* be prosentence-binding quantifiers hiding somewhere in the jungle of natural language. But if there are, I have no idea what they might be.) I therefore judge Grover's attempt to explain sentential quantification to be an extremely interesting failure.

**4.** The following is a typical formula in the language of first-order logic (so called):

$$\exists x\,(p \rightarrow \mathrm{F}xy).$$

The symbols '$x$' and '$y$' that occur in this formula are "variables" on anyone's account. In Quine's view (and in mine), the symbols '$p$' and 'F' are mere articulate blanks, labeled spaces into which a declarative sentence (in the case of '$p$') or a two-place predicate (in the case of 'F') may be inserted. The symbols '$x$' and '$y$', however, are not mere labeled spaces into which names may be inserted—otherwise their occurrences could not be bound by quantifier-phrases to produce general sentences.[30] In Section 3, we examined the consequences of the widespread temptation to regard symbols like the '$p$' of the above formula as variables suitable for binding by quantifier-phrases and not (as they should be regarded) as mere labeled spaces. In the present section, we shall examine the consequences of the corresponding temptation as regards symbols like 'F': the temptation to regard these symbols not as predicate letters, not as labeled spaces, but as variables that can be bound by quantifier-phrases. That is to say, we shall examine *predicative* variables and the predicative quantifiers that bind them—the variables and quantifiers that would lead what I would call simply variables and quantifiers to be called "first-order variables" and "first-order quantifiers."[31] We shall be concerned with expressions like

$$\exists \mathrm{F}^1 \forall x\ \mathrm{F}^1 x$$

and

$$\forall \mathrm{F}^2 \forall x \forall z\ (\mathrm{F}^2 xz \vee \sim \mathrm{F}^2 xz).$$

The superscripts indicate the number of occurrences of lower-case italic letters that immediately follow the roman capitals to which they are "attached." A predicative variable with superscript $n$ is an $n$-place predicative variable. In practice, the superscripts can generally be omitted—although not in sentences like,

$$\forall \mathrm{F}^2 \exists \mathrm{F}^3 \forall x \forall y \forall z\ (\mathrm{F}^2 xy\ \&\ y = z. \rightarrow \mathrm{F}^3 xzy).$$

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[30] There *are* such things as labeled spaces into which names may be inserted: the "individual constants," generally letters from the front of the roman alphabet, that occur in expressions like 'F**a**'.

[31] "[The] assimilation of set theory to logic is seen also in the terminology used by Hilbert and Ackermann and their followers for the fragmentary theories in which the types leave off after finitely many. Such a theory came to be called the predicate calculus . . . of $n$th order . . . , where $n$ is how high the types go. Thus the theory of individuals and classes of individuals and relations of individuals was called the second-order predicate calculus, and seen simply as quantification theory with predicate letters admitted to quantifiers. Quantification theory proper came to be called the first-order predicate calculus." W. V. Quine, *Set Theory and Its Logic*, p. 258.

Our primary interest is in these variables and quantifiers, and not in second- and higher-order logic "itself"—in such questions as "Which formulae in the language of second-order logic are valid?" There is, nevertheless, one question in this area that it is necessary to discuss. It is natural to suppose that if we have in our language the sentence

4. $\forall F \forall x \forall y\ (Fx\ \&\ x = y. \rightarrow Fy)$,

the sentence

$$\forall x \forall y\ (Fx\ \&\ x = y. \rightarrow Fy)$$

will follow from it by universal instantiation on the predicative-variable 'F'. Now we know that in the case of nominal quantification, we can instantiate not only to variables but to singular terms. We know how nominal universal instantiations to singular terms are obtained. In the case of (4), for example, we drop the quantifier-phrases ('$\forall x$' and '$\forall y$') and replace the variables ('$x$' and '$y$') they had bound with singular terms—say, 'Scott' and 'the author of *Waverley*':

∀F (F Scott & Scott = the author of *Waverley* . → F the author of *Waverley*).

But how are *predicative* universal instantiations obtained? Analogy suggests that the universal predicative instantiation of (4), would be obtained by dropping the quantifier-phrase '∀F' and substituting a *predicate* for the predicative variable it had bound ('F'). But what is a "predicate"?

A predicate (in this context) is essentially an expression that has a certain natural number associated with it (its number of *places*), that displays that number in its structure, is such that prefixing an $n$-place predicate to a string of $n$ occurrences of terms yields an expression that is stipulated to be a well-formed sentence (closed or open), and, finally, is such that there is an algorithm for turning any sentence so obtained into a sentence of English or French or German or Latin or . . . Basque or Coptic or Iroquois . . . that is—a sentence of whose meaning is a given and need not be explained. Predicates of one very simple kind are obtained by replacing 0 or more nominal phrases in sentences[32] of some natural language with blank spaces—the number of blank spaces in a predicate being its number of places. So, for example,

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[32] These sentences should be extensional sentences—a sentence *S* being extensional if one cannot produce a sentence with a truth-value different from that of *S* by replacing singular terms in *S* with co-referring singular terms.

‘Edinburgh is north of London’ is a 0-place predicate
‘—is north of London’ and ‘Edinburgh is north of—’ are 1-place predicates
‘—is north of—’ is a 2-place predicate.

We can think of ‘—is north of—’ this way. Consider the sentences

Edinburgh is north of London
Bilbao is north of Madrid
Montreal is north of New York.

These sentences may be said to differ in their substantival aspects and agree in their predicative aspects. The expression

—is north of—

abstracts the common predicative aspect of these sentence and exhibits it as a single expression.

It follows from what we have said that the four expressions

—is north of—Edinburgh London
—is north of—London Edinburgh
—is north of—*x* London
—is north of—*yx*

are, by stipulation, well-formed sentences. And the “translation algorithm” is a simple one: the four sentences above are equivalent to, respectively,

Edinburgh is north of London
London is north of Edinburgh
*x* is north of London
*y* is north of *x*.

More elaborate ways of constructing “predicates” are possible. The predicates that figured in my essay “Can Variables be Explained Away?”[33] looked like this

‘Edinburgh is north of London’ (a 0-place predicate)
‘Edinburgh is north of **1**’ (a 1-place predicate)
‘**1** is north of London’ (a 1-place predicate)
‘**1** is north of **1**’ (a 1-place predicate)

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[33] See also Chapter I, Section 4, of the present work.

‘**1** is north of **2**’ (a 2-place predicate)
‘**2** is north of **1**’ (a 2-place predicate).

The translation algorithm for this style of predicates is illustrated by

‘**1** is north of **2** $xy$’ is equivalent to ‘$x$ is north of $y$’
‘**1** is north of **2** $yx$’ is equivalent to ‘$y$ is north of $x$’
‘**2** is north of **1** $yx$’ is equivalent to ‘$x$ is north of $y$’.

In the context of the present discussion, the simpler construction will serve our purposes well enough.

Universal instantiation on an $n$-place predicative variable consists simply in dropping the universal quantifier-phrase that bound the occurrences of that variable and, possibly, replacing some or all of those occurrences uniformly with occurrences of some other variable or occurrences of an $n$-place predicate. For example,

$$\exists x \forall y \text{ —loves—}xy \;.\rightarrow\; \forall x \exists y \text{ —loves—}yx$$

follows from the theorem of second-order logic

$$\forall \mathrm{F}\ (\exists \mathrm{x} \forall \mathrm{y}\ \mathrm{Fxy} \;.\rightarrow\; \forall \mathrm{x} \exists \mathrm{y}\ \mathrm{Fyx})$$

by universal instantiation. Of course, the meanings of the open sentences ‘—loves—$xy$’ and ‘—loves—$yx$’ need to be explained, but the explanation is simple: ‘—loves—$xy$’ is equivalent to the result of placing the leftmost blank in ‘—loves—‘ with the first term of the string ‘$xy$’, and the other blank with the second term of the string. Therefore, ‘$\exists x \forall y\ x$ loves $y$ . → $\forall x \exists y\ y$ loves $x$’ follows from ‘$\forall \mathrm{F}\ (\exists x \forall y\ \mathrm{F}xy \;.\rightarrow\; \forall x \exists y\ \mathrm{F}yx)$’ by universal instantiation. (And ‘$\exists \mathrm{F}\ \exists x \forall y\ \mathrm{F}xy$’ follows from ‘$\exists x \forall y\ x$ loves $y$’ by existential generalization—*via* ‘$\exists x \forall y$ —loves—$xy$’. But some might prefer the term ‘particular generalization’—oxymoron though it is—to ‘existential generalization’ on the ground that expressions like ‘$\exists \mathrm{F} \forall x\ \mathrm{F}x$’ do not assert the existence of anything.)

Those of us who insist that the “predicate letters,” the ‘F’s and ‘G’s, of what we call the quantifier-variable idiom or the canonical language of quantification are mere labeled spaces, also have a use for predicates—for predicates figure in the definition of ‘*instance* of a theorem of quantifier logic’. An instance of a theorem is obtained by replacing each occurrence of each $n$-place predicate letter therein with the same $n$-place predicate. For example, the predicate letter ‘F’ in the theorem

$$\exists \mathrm{x} \forall \mathrm{y}\ \mathrm{Fxy} \;.\rightarrow\; \forall \mathrm{x} \exists \mathrm{y}\ \mathrm{Fyx}$$

is a two-place predicate letter (owing to the fact that each of its occurrences is followed by two occurrences of variables). If we replace ‘F’ in this theorem with the dyadic predicate ‘—loves—’, we obtain the following *instance* of the theorem

$$\exists x \forall y \text{ —loves—}xy\ .\rightarrow \forall x \exists y \text{ —loves—}yx.$$

An expression that consists of an $n$-adic predicate followed by a string of $n$ occurrences of terms is to be interpreted as it was above. And

$$\exists x \forall y\ x \text{ loves } y\ .\rightarrow \forall x \exists y\ y \text{ loves } x.$$

is therefore an instance of a theorem of quantifier logic and is, as one might say, endorsed by quantifier logic. (‘If something loves everything, everything is loved by something’ is endorsed by quantifier logic.)

Having answered the questions, ‘How are predicative universal instantiations obtained?’, and ‘What is a predicate?’, let us return to our examination of the concept of a predicative variable. In my view, this is a meaningless concept—or, if you prefer, there is no such concept. Predicative variables, I say, cannot be understood as pronouns, and I see nothing else they can be understood as. I could see no reason to believe that there were such things as prosentences—or that there could be. And I can see no reason to believe that there are or could be such things as “proverbs” or “propredicates,” and how could predicative variables be explained other than as regimented propredicates? If—as we saw in Section 3—predicative variables of the simplest kind, 0-place predicative variables, cannot be made sense of, *a fortiori* 1-or-more-place predicative variables cannot be made sense of. (The language of sentential quantification is really only a fragment of the language of predicative quantification: in a sentence in the language of predicative quantification whose only variables carry a ‘0’ superscript, replace—uniformly—each predicative variable with a lower-case italic letter from the appropriate section of the alphabet: thus, ‘$\forall F^0\ \forall G^0\ ({\sim}F^0 \rightarrow .\ F^0 \rightarrow G^0)$’ becomes ‘$\forall p \forall q\ ({\sim}p \rightarrow .\ p \rightarrow q)$’ or ‘$\forall q\ \forall r\ ({\sim}q \rightarrow .\ q \rightarrow r)$’ or what have you.)

That is not to say, however, that I understand no philosophical text that makes use of predicative quantifiers and variables. I would distinguish between *unreflective applications* of predicative quantification and *substantive appeals* to predicative quantification.

For example, if a philosopher writes, “By Leibniz’s Law, I shall understand the statement that an object $x$ and an object $y$ are identical just in the case that they have the same properties and stand in the same relations—or, for those who prefer symbols,

$$x = y \leftrightarrow \forall F \forall G \forall z\ (Fx\ \&\ Gxz\ .\leftrightarrow .\ Fy\ \&\ Gyz)\text{,”}$$

that statement is almost certainly an “unreflective application” of predicative quantification. But if a philosopher writes, “That Leibniz’s Law is a premise of my argument does not contradict the nominalism that I have been at such pains to defend, since that principle can be stated without using quantifiers that bind nominal variables ranging over properties—namely, by doing the work such quantifiers would do by means of quantifiers that bind only predicative variables; to wit:

$$x = y \leftrightarrow \forall \mathrm{F} \forall \mathrm{G} \forall z\ (\mathrm{F}x\ \&\ \mathrm{G}xz\ .\leftrightarrow .\ \mathrm{F}y\ \&\ \mathrm{G}yz).\text{”}$$

that statement is certainly a “substantive appeal” to predicative quantification.

In almost all cases, if a piece of philosophical text contains unreflective applications of predicative quantification, I do not find that feature a barrier to understanding it—for I can replace the sentences in it that contain predicative variables and quantifiers with “parallel” sentences in which the only variables are nominal variables—variables that range over some special sort of object; almost always, the special sort of object is a linguistic object (a predicate or open sentence), a property (quality, attribute, characteristic, feature), or a set. When I do this, I am convinced that the authors I am reading would have been as happy as with my nominal-variable analogues of their sentences as they were with the predicative-variable sentence that actually occurred in their book or essay. That, however, would not be the reaction of authors of texts that contain “substantive appeals” to predicative quantification. For example, if the first of our two imaginary quotations were real, and if I asked its author whether I should distort the meaning of his or her argument if I replaced the above formula with an expression whose only variables were nominal variables that ranged over (besides individuals) properties and relations, I should not be surprised if the author told me that the argument in no way depended on whether the universal quantifiers in that statement bound variables in nominal or in predicative positions. And that is hardly the response I should expect from a philosopher who embraced predicative quantification in order to avoid asserting or presupposing the existence of properties.

Suppose then that I encounter the expression

$$\exists \mathrm{F} \forall x\ \mathrm{F}x$$

in some philosophical essay or book, and that I regard it as an unreflective application of predicative quantification. I may choose to replace it with nominal-variable quantifications over open sentences or predicates or properties (that is, monadic unsaturated assertibles) or sets. This last replacement would attribute to the author of the “philosophical essay or book” something known to be false—that there is a set to which everything belongs. But the other options are workable enough: ‘$z = z$’ is satisfied by everything; for every $x$ the predicate ‘— = —’

is true of $x$ (in the sense that, for any singular term $t$, if $t$ denotes $x$, then $\ulcorner t = t \urcorner$ is true); *that it is identical with itself* is true of everything. (These replacement strategies are easily generalized so as to be applicable to higher-order formulae containing any number of nominal variables and any number of predicate-variables of any number of places.)

I generally find it most useful to replace predicative quantifications with nominal quantifications (just plain quantifications; quantifications *simpliciter*; quantifications *tout court*; quantifications period; quantifications full stop) over properties and relations—most useful because that, or so my experience testifies, is generally what philosophers engaged in "ordinary" philosophical work are really trying to express when they write out formulae containing predicative variables. Most philosophers who write '$\exists F \forall x\, Fx$' would just as happily have written '$\exists y$ $y$ is a property and $\forall x$ $x$ has $y$'; the advantage of the first formula in the eyes of most philosophers is that it's shorter.

Now let us return to my imagined encounter with the (valid) second-order formula '$\exists F \forall x\, Fx$' in some piece of text. I am, let us say, convinced that the surrounding material shows that that occurrence of '$\exists F \forall x\, Fx$' is a case of an unreflective application of predicative quantification and not a case of a substantive appeal to predicative quantification. I decide, therefore, to replace '$\exists F \forall x\, Fx$' in the text am reading with the following formula:[34]

> $\exists y$ ($y$ is a property-of-individuals and $\forall x$ (if $x$ is an individual,
> then $x$ has $y$)).

If for some reason I really wished to, I could make my nominal-variable replacement for the predicate-variable formula look more like the original by "sorting" my variables: lower-case nominal variables are to range over individuals and capital nominal variables are to range over properties-of-individuals. And I might complete the process of making the replacement look like the original by abbreviating, e.g., '$x$ has F' as 'F$x$'—thus obtaining the following nominal-variable *Doppelgänger* of the original predicative-variable expression:

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[34] What do I mean by 'I decide to replace "$\exists F \forall x\, Fx$" with the following formula'? Something like this: I understand nominal-variable quantification, and I don't understand predicative-variable quantification; if I replace '$\exists F \forall x\, Fx$' with the nominal-variable expression introduced by 'the following formula', I shall at least be able to go on with my reading, to make at least some sort of use of the text; if I don't find *some* nominal-variable replacement for '$\exists F \forall x\, Fx$', I shall not be able to do anything with the text from this point on.

And why do I decide to replace it with *that* formula? Well, because of what I know about what predicative-variable formulas "are supposed to say," knowledge that is based on informal remarks I have heard about second-and-higher-order logic and the natural-language paraphrases I have heard people who claim to understand predicative quantification provide for higher-order formulae.

And I don't know where to turn but to informal remarks and natural-language paraphrases for guidance. What the *model theory* for predicative quantification tells me about the sentence '$\exists F \forall x\, Fx$' is certainly not going to help me to understand it. For example, the second-order model theory tells me only that this sentence is valid, true in all second-order models (because, whatever the domain of our models may be, there will exist a subset of that domain—the domain itself—to which all the members of the domain belong). I concede that the model theory is a natural consequence of logicians' intuitive understanding of second-order logic as a "logic" of individuals and properties of individuals and relations that hold among individuals. If we neglect relations and consider only properties, we may say that the structure of the model theory is an inevitable consequence of two very simple ideas: every property-of-individuals has a unique extension; every set of individuals is the extension of at least one property-of-individuals.

$$\exists F\forall x\ Fx.$$

(One might say that philosophers who make unreflective use of predicative quantification are just those philosophers who would not particularly care whether the sentences in their writings that contained predicative variables and quantifiers were replaced by a nominal-variable *Doppelgänger*.) In what follows, however, I'll keep 'has' visibly present and use only the customary lower-case italic letters for nominal variables. And I'll allow restrictive clauses like '$y$ is a property-of-individuals' and '$x$ is an individual' to be "understood."

This is plain sailing. The seas begin to rise, however, when we consider formulae that contain two-or-more-place predicative variables—for example,

$$\exists F\forall x\forall y\ Fxy.$$

We who live by the slogan, "Nominal variables only, please!" will obviously want to replace this statement with something like, "There is a dyadic relation such that (any object stands in that relation to itself and) any two objects stand in that relation to each other." Anyone who is willing to say that properties and relations are what I suggested they were in Chapter III (that is, unsaturated assertibles) will have the advantage of a vocabulary that is more uniform than the traditional one—for if one speaks of "properties" (or "attributes" or "qualities"), on the one hand, and "relations," on the other, one will say, for example, that the earth *has* or *exemplifies* or *instantiates* the property "inhabitatbility," and that the earth and the star Sirius *stand in* or *bear to each other* the relation "being 8.61 light years apart." But if one speaks of monadic, dyadic, etc., saturated assertibles, one will say instead that the monadic unsaturated assertible *that it is inhabitable* is *true of* the earth, and the dyadic unsaturated assertible *that they are 8.61 light-years apart* is *true of* the earth and Sirius.

I may therefore choose to replace '$\exists F\forall x\ Fx$' with:

$$\exists y\ (y \text{ is a monadic unsaturated assertible } \&\ \forall x\ y \text{ is true of } x),$$

and '$\exists F\forall x\forall y\ Fxy$' with:

$$\exists z\ (z \text{ is a dyadic unsaturated assertible } \&\ \forall x\forall y\ z \text{ is true of } x \text{ and } y).$$

This much seems straightforward enough. But consider this expression:

$$\exists F \exists x \exists y\, (Fxy \;\&\; {\sim}\, Fyx).$$

This is not a valid formula of second-order logic, but those who find predicative-variable quantification intelligible will regard it as a true statement, since it follows (is supposed to follow) by two applications of nominal existential generalization and one application of predicative existential/particular generalization from

—is north of— Edinburgh London & ~ (—is north of— London Edinburgh);

and that statement is equivalent in meaning to the obviously true

Edinburgh is north of London & ~ London is north of Edinburgh.

It is therefore a statement for which I shall want to find a *true* nominal-variable replacement. But what will that replacement be? Obviously, not this:

$\exists z$ ($z$ is a dyadic unsaturated assertible & $\exists x \exists y$ ($z$ is true of $x$ and $y$ & ~ $z$ is true of $y$ and $x$))

—for to assert that would be to assert a contradiction, owing to the fact that the plural-term builder ‘and’ is “order-indifferent”: what is true of (say) Edinburgh and London is true of London and Edinburgh.[35] It is obviously impossible for there to be a dyadic unsaturated assertible such that one can say it of Edinburgh and London and thereby assert that Edinburgh is north of London *and* one can say it of Edinburgh and London and thereby assert that London is north of Edinburgh.

But wait—could we not say,

It is true of Edinburgh and London *that the former is north of the latter* & ~ It is true of London and Edinburgh *that the former is north of the latter*?

No we cannot, for that ‘*that the former is north of the latter*’ is not a dyadic unsaturated assertible. That is, it is not something that can be said of two things. If it were, it would make sense to say, “It is true of the two cities circled in red on the map that the former is north of the latter,” and it does not. (Compare: ‘*That he is so-called because of his size*’ is not an unsaturated assertible. That is, it is not something that can be said of a thing. If it were, it would make sense to say, “See that fellow over there? Yes, the one buying a newspaper. He is so-called because of his size,” and it does not. We might say that, taking the familiar phrase ‘token reflexive’ as our model, ‘*that the former is north of the latter*’ and ‘*that he is so-called because of his size*’ were type-reflexive expressions.)

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[35] ‘$\exists x$ ($x$ is a dyadic relation & $\exists y \exists z$ ($y$ and $z$ stand in $x$ & ~ $z$ and $y$ stand in $x$))’ obviously faces the same objection.

‘Edinburgh is north of London’ is, of course, a sentence that figured prominently in Russell’s discussion of relations in *The Problems of Philosophy*. Russell maintained that there exists—or at any rate “subsists”—a relation, a single relation, that one asserts to hold between those two cities when one asserts that Edinburgh is north of London. He solved the problem of finding a name for this relation by the simple expedient of placing the words ‘north of’ in quotes—in what one might call substantive-making quotes—for example:

> . . . the relation ‘north of’ does not seem to *exist* in the same sense in which Edinburgh and London exist.[36]

Let us grant that Russell did indeed manage to refer to a relation when he wrote those words, grant that there is indeed such a relation as the one he calls ‘“north of.”’ Now imagine that Fiona has said, “Edinburgh is north of London” One might suppose that the conjunction of Fiona’s assertion and the proposition that there is such a thing as the relation ‘north of’ is equivalent to ‘Edinburgh and London stand in the relation “north of.”’ But consider the geographically challenged Lord Copper, who has said, “London is north of Edinburgh.” There would seem to be an equally good case for the position that the conjunction of Lord Copper’s assertion and the proposition that there is such a thing as the relation ‘north of’ is equivalent to ‘Edinburgh and London stand in the relation “north of.”’ And yet what Fiona has said was true and what Lord Copper said was false. It would seem, therefore, that there must be two ways in which the relation Russell calls “north of” can be *said to* hold between (or said to be true of) Edinburgh and London; and it must be that it *does* hold between, or *is* true of, them in one of these ways and not in the other. One of these ways is the way in which it is true of Edinburgh and London if Edinburgh is north of London, and the other is the way in which it is true of Edinburgh and London if London is north of Edinburgh. We could express them this way:

> “North of” is Edinburgh-London true of Edinburgh and London
> “North of” is London-Edinburgh true of Edinburgh and London.

If we assume that the nouns (including “north of”) in these sentences occupy positions subject to existential generalization, these sentences logically imply

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[36] *The Problems of Philosophy*, p. 153.

$\exists x \exists y \exists z$ ($x$ is $yz$ true of $y$ and $z$)

and

$\exists x \exists y \exists z$ ($x$ is $zy$ true of $y$ and $z$).

But how are we to make sense of general sentences like these? If the former follows logically from '"North of" is Edinburgh-London true of Edinburgh and London', then, as was said, the nouns in the latter sentence occupy positions subject to existential generalization. And if that is so, then a phrase with the same referent may be substituted for any of them, *salva vertitate*. And then (on some not unreasonable assumptions of co-referentiality),

> Russell's favorite example of a relation is the city in which Hume was born-London true of Edinburgh and the second-largest city in Europe

has the same truth-value as '"North of" is Edinburgh-London true of Edinburgh and London'. And what does the former sentence even *mean*?

One way in which to make sense of sentences like '$\exists x \exists y \exists z$ ($x$ is $yz$ true of $y$ and $z$)' is Quine's. Quine, as I have more than once remarked, has said that higher-order logic is best regarded as set theory in disguise—set theory "in sheep's clothing."[37]

Boolos has succinctly stated Quine's thesis this way:

> The logician should not, Quine says, write "*Fx*" and thereupon quantify on "*F*," but should instead write "$x \in \alpha$" and then, if he wishes, quantify on "α."[38]

(This is, of course, a statement of only as much of Quine's proposal as deals with monadic predicative variables, and it therefore does not address our problem, the problem of how to represent sentences like '$x$ is $yz$ true of $y$ and $z$' and '$x$ is $zy$ true of $y$ and $z$'. But we could continue Boolos's statement of Quine's proposal this way:

> The logician should not write "F*xy*" and thereupon quantify on "*F*", but should instead write "$\langle x, y \rangle \in \alpha$" and then, if he wishes, quantify on "α.")

Quine's answer to the question 'How are we to make sense of the idea that there are two ways for the relation "north of" to hold between Edinburgh and London?'

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[37] That is, higher-order logic is a theory pretending to be nothing more than logic. (See note 2 to Chapter IV.)

[38] "Second Order Logic", p. 39.

is this: Consider the set of all ordered pairs of terrestrial objects such that the first member of each pair is north of its second member. Consider also the set of all ordered pairs of terrestrial objects such that the second member of each pair is north of its first member. We'll pick one of these two sets and call it the relation 'north of'. Let's say we've picked the first. There are two ways in which one can say that 'north of' holds between these two cities: one can say that ⟨Edinburgh, London⟩ is a member of 'north of' and one can say that ⟨London, Edinburgh⟩ is a member of 'north of'. If we say it in the first way, we're agreeing with Fiona, and what we say is true. If we say it in the second way, we're agreeing with Lord Copper, and what we say is false. And, Quine's solution to the problem we have posed is that '$x$ is $yz$ true of $y$ and $z$' should be read '$\langle y, z\rangle \in x$', and that '$x$ is $zy$ true of $y$ and $z$' should be read '$\langle z, y\rangle \in x$'.

Boolos has several objections to Quine's proposal to replace (apparent) predicative quantifications with nominal quantifications over sets, the most important of them being,

> [T]he usual conventions about the use of special variables like "$\alpha$" guarantee that rewriting second-order formulas in Quine's way can result in the loss of validity or implication. For example, "$\exists F \forall x\, Fx$" is valid, but "$\exists \alpha \forall x\, x \in \alpha$" is not; and "$x = z$" is implied by "$\forall Y\,(Yx \rightarrow Yz)$" but not by "$\forall \alpha\,(x \in \alpha \rightarrow z \in \alpha)$."

As far as I know, Quine never remarked on this passage; indeed I do not know whether he was familiar with the paper ("On Second-Order Logic") in which it occurred. But I doubt whether he would have been (or, as it may be, was) troubled by Boolos's example of a "loss of implication." I would expect him to have responded to it in some such way as this. "But that's exactly my point. Of course, '$x = z$' is not a *logical* consequence of '$\forall \alpha\,(x \in \alpha \rightarrow z \in \alpha)$'. But consider the simple deduction,

$\forall \alpha\,(x \in \alpha \rightarrow z \in \alpha)$ *Premise*
$\forall x\, \exists \alpha\, \alpha = \{x\}$ *Premise*

*hence*,

$x \in \{x\} \rightarrow z \in \{x\}$
$x \in \{x\}$ *Premise*
$\forall x \forall y\,(y \in \{x\} \rightarrow y = x)$. *Premise*

*hence*,

$x = z$.

The premises of this deduction after the first are theorems of set theory (not very deep ones, to be sure). If we expand them—by the definition of the curly brackets—to ‘$\forall x\, \exists \alpha\, \alpha = \iota y\, (x \in y\ \&\ \forall z\, (z \in y \leftrightarrow z = x))$’ and $x \in \iota y\, (x \in y\ \&\ \forall z\, (z \in y \leftrightarrow z = x))$’ and go on to replace *those* statements with their Russellian *analysantia*, ‘$x = z$’ follows from the resulting statements and the first premise. (Follows *logically*: by the rules of quantifier logic with identity.) *Of course* I know that the nominal-variable set-theoretical ‘counterpart’ of a valid second-order deduction won’t generally be *logically* valid; all I ask is that the added premises needed to secure logical validity be theorems of set theory. And since predicative variables make no sense, that ‘counterpart’ is the only meaningful way to interpret the second-order deduction of ‘$x = z$’ from ‘$\forall Y\, (Yx \rightarrow Yz)$. I couldn’t have asked for a better illustration of the validity of my charge that second-order logic (so called) is set theory in sheep’s clothing.”

Whatever the force of that reply may be, however, there is no corresponding reply to Boolos’s example of a “loss of validity.” Quine cannot say, “Obviously, I’m not going to say that my ‘replacement for a valid sentence of second-order logic will be a valid sentence of ordinary nominal-variable logic. I do say, however, that it will be either a valid sentence or a theorem of set theory.” He cannot say this because ‘$\exists \alpha \forall x\, x \in \alpha$’ is neither a logically valid sentence nor a theorem of set theory; in fact, its *denial* is a theorem of set theory.

I leave this problem to Quine (who, I am sure, is happily working away on just such problems in the Elysian Fields). I will point out only that my proposed nominal-variable substitute for second-order logic does not face a corresponding problem. Informally speaking, its replacement for ‘$\exists \mathrm{F} \forall x\, \mathrm{F}x$’ is ‘There is a monadic unsaturated assertible that is true of everything’. (That is, ‘Something that can be said of things is such that it can be said truly of everything whatever’. And indeed there are many: *that it is identical with itself*; *that its properties are mutually consistent*; *that it is either identical with Socrates or identical with something else.*

As to Boolos’s example of “loss of implication,” I should like to say that, yes, implication is lost in many cases, but that’s all right because “the added premises needed to secure logical implication” are theorems of the theory of unsaturated assertibles. I cannot say that, however, because there *is* no theory of unsaturated assertibles. But I can say that

5. $\forall x \exists y$ ($y$ is a monadic unsaturated assertible & $y$ is true of $x$ & $\forall z$ ($y$ is true of $z \rightarrow z = x$))

would be a theorem of any satisfactory theory of unsaturated assertibles. (Consider, for example, the sentence

$y$ is a monadic unsaturated assertible & $y$ is true of Plato & $\forall z$ ($y$ is true of $z \rightarrow$ $z$ = Plato).

That sentence is satisfied by *that it is Plato*.) And ‘$x = z$’ is a logical consequence of (5) and

$\forall y$ ($y$ is true of $x \rightarrow y$ is true of $z$).

Quine's proposal, as we have seen, makes use of ordered pairs, and, more generally, ordered $n$-tuples or sequences. There is another way to use sequences[39] to provide a nominal-variable replacement for predicative-variable quantification—a way that eschews $n$-adic unsaturated assertibles, $n > 1$, altogether (and which therefore avoids the problem of how to make sense of the idea of there being more than one way for a dyadic relation to hold between two objects).

Let us say that *sequentive assertibles* are monadic assertibles that are true only of sequences: *that it is a sequence*; *that it is a six-term sequence*; *that it is a two-term sequence whose second term is north of its first term*. Let the terms 'binary', 'ternary', 'quaternary', etc., apply in the obvious way to sequentive assertibles (all of which, remember, are *monadic* assertibles). For example,

> *That it is a 2-term sequence whose second term is north of its first term* is a *binary* sequentive assertible
>
> *That it is a 3-term sequence whose second term is north of its third term and south of its first term* is a *ternary* sequentive assertible.

Then we may replace '$\exists F \exists x \exists y$ (F$xy$ & ~ F$yx$)' with

> $\exists z \exists x \exists y$ ($z$ is a monadic sequentive assertible & $z$ is true of $\langle x, y\rangle$ & ~ $z$ is true of $\langle y, x\rangle$).

(This is a true statement, since it follows from the true statement

> *That it is a 2-term sequence whose first term is north of its second term* is a monadic sequentive assertible & *that it is a 2-term sequence whose first term is north of its second term* is true of ⟨Edinburgh, London⟩ & ~ *that it is a 2-term sequence whose first term is north of its second term* is true of ⟨London, Edinburgh ⟩).)

These two "solutions" to the problem of finding a nominal-variable "replacement" for predicative-variable sentences presuppose the existence of abstract objects that are not assertibles—namely sets and/or sequences that are not sets. Suppose, however, that I, I who repudiate predicative quantification, wish—as I do—to include in my ontology no abstract objects but assertibles. If my ontology includes only assertibles, what is my true nominal-variable replacement for

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[39] This other "way" is neutral on the question whether sequences—for example, ⟨Edinburgh, London⟩ and ⟨Edinburgh, Manchester, London⟩—are sequences according to the Wiener-Kuratowski account of sequences as sets or *sui generis* abstract objects that are not sets. It will be convenient to suppose that we have defined 'sequence' in such a way that a 1-term sequence is identical with its sole term—so that, for example, ⟨Edinburgh⟩ = Edinburgh.

> $\exists F \exists x \exists y\ (Fxy\ \&\ {\sim}\ Fyx)$

to be? We have seen that the solution to this problem must involve two ways in which an assertible can be true of two things.

> $\exists z$ ($z$ is a dyadic unsaturated assertible & $\exists x \exists y$ ($z$ is $xy$ true of $x$ and $y$ & ~ $z$ is $yx$ true of $x$ and $y$)),

or at least something very much like it.

But how are we to make sense of the idea of a plurality of ways in which an assertible can be said to be true of certain objects? What definientia can we provide for, and how can we distinguish between,

> $z$ is $xy$ true of $x$ and $y$

and

> $z$ is $yx$ true of $x$ and $y$?

(And, eventually, for sentences like '$w$ is $xyxz$ true of $x$, $y$, and $z$' and '$w$ is $yyzx$ true of $x$, $y$, and $z$'. But let's start with dyadic assertibles.)

What we need is a definition (a satisfactory definition, of course) of the open sentence $x$ is $yz$ true of $y$ and $z$. I will attempt to provide one. I begin with a series of preliminary definitions.

Let us say that the sentence 'Edinburgh is north of London' is the 'Edinburgh'-'London' completion of the dyadic predicate '—is north of—', and that 'London is north of Edinburgh' is the 'London'-'Edinburgh' completion of that predicate. Similarly, the 'the Arc de Triomphe'-'the Place de la Concorde' completion of the predicate '—is in the same city as—' is the sentence 'The Arc de Triomphe is in the same city as the Place de la Concorde', the 'the earth'-'the moon' completion of the predicate '—is larger than—' is the sentence 'The earth is larger than the moon', and the '$z$'-'$y$' completion of the predicate '—is older than—' is the *open* sentence '$z$ is older than $y$'.[40]

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[40] The monstrous formal definition I consign to the decent obscurity of a footnote:

> For any terms $v$ and $w$ and any dyadic predicate $z$, if $v_q$ is the quotation name of $v$, and $w_q$ is the quotation name of $w$, and $z_q$ is the quotation name of $z$, the definite description ⌜the $v_q w_q$ completion of $z_q$⌝ denotes the sentence formed by filling the leftmost blank or open space in $z$ with $v$ and the other with $w$.

Let us say that an expression formed by prefixing ‘R’ to a predicate surrounded by round brackets (e.g., ‘R(—is north of—)’ is a canonical relation name. Let us assume that every relation has a canonical relation name[41]—although any relation could easily have non-canonical names as well. For example, ‘R(—is north of—)’ and ‘Russell’s favorite example of a relation’ may be, respectively, a canonical and non-canonical name of the same relation. Then

$x$ expresses $y =_{df} y$ is a relation and $x$ is a predicate and the result of prefixing ‘R’ to $x$ denotes y.

Thus, if the predicate ‘—is north of—’ is the predicate to which Marie’s lecture was devoted, and if the relation R(—is north of—) is Russell’s favorite example of a relation, the predicate to which Marie’s lecture was devoted expresses the relation that is Russell’s favorite example of a relation.

I offer now the following definition of ‘$z$ is $xy$ true of $x$ and $y$’:

$z$ is $xy$ true of $x$ and $y =_{df} \forall u \forall v \forall w$ ($u$ is a predicate & $u$ expresses $z$ & $v$ is a term & $v$ denotes $x$ & $w$ is a term & $w$ denotes $y$ . → the $vw$ completion of $u$ is true).

A definition—a matching of a definiendum and a definiens—can be shown to be “correct” only in cases in which the biconditional whose constituents are that definiendum and that definiens can be shown to be some sort of necessary truth. That condition is not satisfied in the present case, but if we cannot show that this definition is correct there is a test we can subject it to. If the definiendum of a definition is an open sentence, then its definiens must be an open sentence in which the same variables are free. And anyone who accepts the definition must regard the universal closure of the biconditional whose constituents are the definiendum and the definiens of the definition as necessarily true—and must therefore accept as true everything that follows from it by Universal Instantiation. Therefore, anyone who accepts the above definition of ‘$x$ is $yz$ true of $y$ and $z$’ must accept everything that follows from

$\forall x \forall y \forall z$ [$z$ is $xy$ true of $x$ and $y \leftrightarrow \forall u \forall v \forall w$ ($u$ is a predicate & $u$ expresses $z$ & $v$ is a term & $v$ denotes $x$ & $w$ is a term & $w$ denotes $y$ . → the $vw$ completion of $u$ is true)].

by UI—including

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[41] Or perhaps more than one—and more than one even “within” the same language. No doubt ‘R(—is north of—)’ and ‘R(—is to the north of—)’ are two canonical names of the same relation.

> Russell's favorite example of a relation is the city in which Hume was born-London true of Edinburgh and the second-largest city in Europe
>
> $\leftrightarrow$
>
> ∀u∀v∀w (*u* is a predicate & *u* expresses Russell's favorite example of a relation & *v* is a term & *v* denotes the city in which Hume was born & *w* is a term & *w* denotes London . → the *vw* completion of *u* is true).

We assume that Russell's favorite example of a relation is R(—is north of—); the left-hand constituent of this biconditional is therefore true just in the case that

> 6. R(—is north of—) is the city in which Hume was born-London true of Edinburgh and the second-largest city in Europe.

We assume that Edinburgh is north of London, that Edinburgh is the city in which Hume was born and that London is the second-largest city in Europe. It follows that our definition constrains us to accept (6), and therefore to accept

> 7. ∀u∀v∀w (*u* is a predicate & *u* expresses Russell's favorite example of a relation & *v* is a term & *v* denotes the city in which Hume was born & *w* is a term & *w* denotes London. → the *vw* completion of *u* is true).

Is (7) true? Let us instantiate (7) to terms and predicates that yield a conditional with a true antecedent and which are otherwise randomly and arbitrarily chosen (and let's further assume that Hume was born in Edinburgh *and* died in Edinburgh):

> '—is north of—' is a predicate & '—is north of—' expresses Russell's favorite example of a relation & 'the city in which Hume died' is a term & 'the city in which Hume died' denotes the city in which Hume was born & 'the second-largest city in Europe' is a term & 'the second-largest city in Europe' denotes London . → the 'the city in which Hume died'-'the second-largest city in Europe' completion of '—is north of—' is true).

The antecedent of this conditional is true, and so is its consequent—for the 'the city in which Hume died'-'the second-largest city in Europe' completion of '—is north of—' is 'The city in which Hume died is north of the second-largest city in Europe.'

Our definition of '*z* is *xy* true of *x* and *y*' has passed the following test: we replaced '$=_{df}$' in the definition with '↔', and subjected the universal closure of the result to instantiations that were arbitrary (leaving aside their having been chosen so as to lead to falsity if any instantiation could). The result was consonant with the truth-conditions earlier given for sentences like ‘R(—is north of—) is Edinburgh-London true of Edinburgh and London’.

One might be suspicious of our definition, owing to the fact that its definiens involves quantification over linguistic items (predicates and terms) and the application of the semantical predicate ‘is true’ to linguistic items, whereas the variables in its definiendum range over assertibles (‘*z*’) and objects-in-general (‘*x*’ and ‘*y*’). A critic might well ask, “Is there not something odd about appealing to linguistic items in an attempt to define words and phrases that pertain to the properties of items that exist independently of language (albeit those linguistic items are semantically intimately related to those non-linguistic items and their properties)? A *proper* philosophical definition looks like this:

> *x* is a necessarily true proposition $=_{df}$ *x* is a proposition that is true in all possible worlds,

and not like this:

> *x* is a necessarily true proposition $=_{df}$ The sentence formed by prefixing ‘□’ to any sentence that expresses *x* is true.”

The imaginary critic has a point. Still, such a definition might be the only one available, and it might be useful. (The critic’s illustrative example is perhaps not a *very* useful definition—for its corresponding biconditional is true only if ‘□ . . .’ means ‘*it is a necessary truth that* . . .’.) For example, I myself wrote not too long ago (having first given an account of what it was for a sentence to be “analytic”),

> Let us say that a proposition is analytic if it could be expressed by an analytic sentence.[42]

I might have expressed essentially the same thought by writing something that more closely resembled the above definition of ‘*z* is *xy* true of *x* and *y*’, namely,

> *x* is an analytic proposition $=_{df}$ $\exists y$ (*y* is an analytic sentence & the term formed by prefixing ‘the proposition that’ to *y* denotes *x*).

And it seems to me that the class of “analytic propositions” (so defined) is an interesting class of propositions. Perhaps there is some way other than this to provide a definition of “analytic proposition” that is more—how shall I say?—*direct* than this, a definition that appeals only to the intrinsic features of propositions and makes no use of linguistic terms ('sentence') or semantical terms ('denote'). But I know of no such definition, and this definition is better than no definition at all.

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[42] In “Two Problems for a Truth-Centered Ontology.”

And that is what I would say of our definition of '$z$ is $xy$ true of $x$ and $y$': I do not know of a way to provide a definition of this sentence that does not involve linguistic terms like 'predicate' and 'sentence' and semantical terms like 'express' and 'denote'. I concede that there are problems with definitions of this sort. For one thing, there are "cardinality" problems similar to those that afflict substitutional quantification. The real numbers for example, far outrun the available supply of names for them, and this fact can be shown to imply that our definition endorses the proposition

> $\exists x \exists y\ (x > y \mathbin{\&} y > x)$.

For we have

> $x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule.
>
> →
>
> $\forall u \forall v \forall w$ ($u$ is a predicate & $u$ expresses $z$ & $v$ is a term & $v$ denotes $y$ & $w$ is a term & $w$ denotes $x$ . → the $vw$ completion of $u$ is true).

(Compare:

> There are no unicorns
>
> →
>
> $\forall x \forall y$ ($x$ is a lion & $y$ is a unicorn . → $x$ and $y$ were fighting for the crown.)

And, therefore,

> $x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule . → $z$ is $yx$ true of $x$ and $y$

And, therefore,

> $\forall x \forall y \forall z$ ($x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule . → $z$ is $yx$ true of $x$ and $y$).

And, therefore,

$\forall x \forall y$ ($x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule . $\rightarrow$ R(—>—) is $yx$ true of $x$ and $y$

And, therefore,

$\forall x \forall y$ ($x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule . $\rightarrow y > x$).

But we also have

$\exists x \exists y$ ($x > y$ & $x$ is an irrational number that cannot be specified by a finite rule & $y$ is an irrational number that cannot be specified by a finite rule),

And, therefore,

$\exists x \exists y$ ($x > y$ & $y > x$).

There are, however, various ways to deal with difficulties of this kind. Consider, for example, the above definition of 'analytic proposition' (which faces an analogous cardinality problem if, as it seems reasonable to suppose, there are more propositions than sentences). Consider some proposition that is an analytic proposition by the terms of that definition—say, the proposition that if two people are of different ages, one of them is older than the other. Let us say that 'If two people are of different ages, one of them is older than the other' is one of that proposition's "denotation sentences"—meaning that if it is prefixed with 'the proposition that', the resulting term denotes that proposition. Any denotation sentence for the proposition that if two people are of different ages, then one is older than the other will be an analytic sentence. And—surely?—this must be because the proposition that if two people are of different ages, then one is older than the other has some property $F$ such that, necessarily, any denotation sentence of any proposition that has $F$ must be analytic. Anyone who affirms these things may consistently add a further statement along the following lines: "Now of course, for every real number between 1 and 2, there is the proposition that it is identical with itself. Most of these propositions will have no denotation sentences. And yet they will all have the property $F$. We may therefore say that an analytic proposition is a proposition that has the property $F$—that property *in virtue of which* those propositions that do have analytic denotation sentences have *analytic* denotation sentences." Obviously, our assumption that every unsaturated assertible can be expressed by a predicate could be revised in essentially the same way.

If we accept the above definiens for '$z$ is $xy$ true of $x$ and $y$', we have made sense of

> $\exists z$ ($z$ is a dyadic unsaturated assertible & $\exists x \exists y$ ($z$ is $xy$ true of $x$ and $y$ & $\sim z$ is $yx$ true of $x$ and $y$)),

our nominal-variable replacement for '$\exists \mathrm{F} \exists x \exists y$ ($\mathrm{F}xy$ & $\sim \mathrm{F}yx$)'. And this is the sense we have made of it, expressed with less formal apparatus than is used in our official definientia:

> There is a dyadic unsaturated assertible and objects $x$ and $y$ that are such that
>
> for any predicate that expresses it, any term $v$ that denotes $x$, and any term $w$ that denotes $y$, the sentence formed by filling the leftmost blank in that predicate with $v$ and the other blank with $w$ is a true sentence,
>
> and such that
>
> for some predicate that expresses it, some term $v$ that denotes $x$, and some term $w$ that denotes $y$, the sentence formed by filling the leftmost blank in that predicate with $w$ and the other blank with $v$ is not a true sentence,

And this sentence is true—for there are many dyadic unsaturated assertibles that satisfy '$z$ is a dyadic unsaturated assertible & $\exists x \exists y$ ($z$ is $xy$ true of $x$ and $y$ & $\sim z$ is $yx$ true of $x$ and $y$)'; R(—is north of—), for example, and R(—>—). Consider the former:

> $\exists x \exists y$ (R(—is north of—) is $xy$ true of $x$ and $y$ & $\sim$ R(—is north of—) is $yx$ true of $x$ and $y$)

is true because

> R(—is north of—) is Edinburgh London true of Edinburgh and London & $\sim$ R (—is north of—) is London Edinburgh true of Edinburgh and London.

This result shows that R(—is north of—) is a *non-symmetrical* relation—that is, for some $x$ and some $y$, it is $xy$ true of $x$ and $y$ and is not $yx$ true of $x$ and $y$. It is in fact an *asymmetrical* relation, owing to the fact that for some $x$ and $y$ it is $xy$ true of $x$ and $y$, and, for *any* $x$ and *any* $y$, if it is $xy$ true of $x$ and $y$, it is not $yx$ true of $x$ and $y$.

Now if there are dyadic relations (dyadic unsaturated assertibles), there must be triadic relations and tetradic relations and all the rest—R(—lies between—and—), R(—is north of—and—is west of—), and so on. We have said what the ways are in which a dyadic assertible can be said to be true of two given objects. (The *two* ways: there are two and only two ways to say of a dyadic assertible that it is true of Edinburgh and London: that it is Edinburgh London true of those two cities, and that it is London Edinburgh true of them.) We need now to consider the general case: the case of the ways in which an $n$-adic assertible can be said to be true of *m* objects (where $1 \leq m \leq n$). We require definientia not only for expressions like '*z* is *xy* true of *x* and *y*' but for expressions like '*w* is *xyxz* true of *x*, *y*, and *z*'. One sentence that follows this pattern is '*w* is Edinburgh Manchester Edinburgh London true of Edinburgh, Manchester, and London'. This sentence can be satisfied only by a tetradic relation (for 'Edinburgh Manchester Edinburgh London' is a sequence of *four* occurrences of terms) and it specifies one of the *thirty-six* ways in which a tetradic relation can be said to be true of Edinburgh, Manchester, and London. Let us call a sentence a *relational assertion* if it "follows this pattern," that is, the pattern

___ is ___ true of ___,

where the leftmost space is filled either by a variable or by a singular term that denotes, or purports to denote, for some $n \geq 1$, an *n*-adic relation, the middle space is to be filled a string of *n* occurrences of terms ('Edinburgh'; 'Edinburgh London'; 'Edinburgh Manchester *y* Edinburgh'), and the rightmost space by a "list" that contains the same terms as the string in the middle space: ('Edinburgh'; 'Edinburgh and London'; 'Edinburgh, *y*, and Manchester').

We wish to extend our definition of '*z* is *xy* true of *x* and *y*' so as to obtain a definition that applies to any relational sentence—to '*w* is *xyxz* true of *x*, *y*, and *z*' and to '*v* is *ywyzx* true of *w*, *x*, *y*, and *z*,' for example.[43] It is not difficult to do this. Consider for example the sentence,

*w* is *xyxz* true of *x*, *y*, and *z*.

The extended definition yields the definiens:

$\forall s \forall t \forall u \forall v$ (*s* is a predicate & *s* expresses *w* & *t* is a term & *t* denotes *x* & *u* is a term & *u* denotes *y* & *v* is a term & *v* denotes *z* . $\rightarrow$ the *tutv* completion of *s* is true).

It should be evident how to write the corresponding definiens for any relational assertion.

The number of ways in which an *n*-adic assertible can be said to be true of *m* objects ($1 \leq m \leq n$) is an interesting problem in combinatorics, which the reader may wish to address on some rainy Saturday afternoon. For values of $m \leq 9$, it is equivalent to the following problem: how many *n*-digit numerals can be formed from some *m* of the digits '1', '2',…, '9', if repetitions are allowed—as they must be if $m < n$—, and if each of those $m$ digits occurs at least once in the numeral? A test case for your solution:[44] one may form eighty-one (= $3^4$) four-digit numerals from '1', '2', and '3'—'1111' and '2131', for example. Forty-five of them are numerals in which at least one of '1', '2', and '3' does not occur—'1111' and '2121', for example. The number of numerals that satisfy the specified conditions is thus 81–45 = 36. And there are thirty-six ways in which, e.g., the tetradic relation R(—is north of—and—is west of—) can be said to be true of Edinburgh, Manchester, and London; it can, for example, be said to be Edinburgh London Edinburgh Manchester true of those three cities. It *is* true of them in that way just in the case that Edinburgh is north of London and west of Manchester.

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[43] These two sentences are relational assertions because the string '*xyxz*' contains the same terms as the list '*x*, *y*, and *z*', and the string '*ywyzx*' contains the same terms as the list '*w*, *x*, *y*, and *z*'. Note that '*w* is *xzzy* true of *x* and *y*' and '*w* is *xyy* true of *x* and *z*' do not satisfy this condition; in the former sentence, '*xzzy*' contains '*z*' and '*x* and *y*' does not; in the latter, '*x* and *z*' contains '*z*' and '*xyy*' does not.

Our final example will be a replacement for the right-hand constituent of

$$x = y \leftrightarrow \forall \mathrm{F} \forall \mathrm{G} \forall z\ (\mathrm{F}x \ \&\ \mathrm{G}xz\ .\leftrightarrow .\ \mathrm{F}y \ \&\ \mathrm{G}yz)$$

(our imaginary philosopher's attempt to state Leibniz's Law):

$\forall w \forall v \forall z$ ($w$ is true of $x$ & $v$ is $xz$ true of $x$ and $z$ . ↔ . $w$ is true of $y$ & $v$ is $yz$ true of $y$ and $z$).[45]

It is evident that we have the resources to find a nominal-variable "replacement" for any predicative-variable expression.

5. We have in this chapter examined three alternatives to the account of quantification that had been presented and defended in Chapter I. Each of these three is inconsistent with the meta-ontology that was defended in Chapter I and which figured essentially in the discussions of non-existent objects in Chapter II, abstract objects in Chapter III, and possible objects in Chapter IV.

Substitutional quantification and predicative quantification promise us the capacity to say things like

> Some of the things Haldeman said contradicted some of the things that Dean said

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[44] A less demanding test case: one may form twenty-seven (= $3^3$) three-digit numerals from '1', '2', and '3'. Twenty-one of them are numerals in which at least one of '1', '2', and '3' does not occur. The number of numerals that satisfy the specified conditions is thus 27–21 = 6. And there are six ways in which a triadic relation can be said to be true of three objects.

[45] This statement of the replacement assumes that every asymmetrical relation has a converse, where $z$ and $z'$ are converse (each is a converse of the other) just in the case that

For some $x$ and some $y$, $z$ is $xy$ true of $x$ and $y$
For some $x$ and some $y$, $z'$ is $xy$ true of $x$ and $y$
For all $x$ and all $y$ ($z$ is $xy$ true of $x$ and $y$ ↔ $z'$ is $yx$ true of $x$ and $y$.

For example, both R(—is south of—) and R(—is farther from the North Pole than is—) are converses of the asymmetrical relation R(—is north of—). If this assumption is not granted, the replacement should be some alphabetic variant of

$\forall w \forall v \forall v' \forall z$ ($w$ is true of $x$ & $v$ is $xz$ true of $x$ and $z$ & $v'$ is $zx$ true of $x$ and $z$ . ↔ . $w$ is true of $y$ & $v$ is $yz$ true of $y$ and $z$ & $v'$ is $zy$ true of $y$ and $z$).

> Any two objects with the same physical properties have the same mental properties
>
> The orbital velocity of a planet equals its escape velocity divided by the square root of 2

without thereby undertaking ontological commitment to abstract objects—to propositions, attributes, or numbers. (Propositional quantification is a special case of predicative quantification, a declarative sentence being a 0-place predicate. Propositional quantification by itself promises us the capacity to avoid ontological commitment only to propositions. Propositional quantification is discussed as a separate item in this chapter simply because of Dorothy Grover's extremely interesting defense of it.)

I have presented an argument for the conclusion that all variables must be nominal variables, a thesis that implies that sentences like '$\forall p \forall q\ (q \vee {\sim}p\ .\!\rightarrow\!.\ p \rightarrow q)$' and '$\forall x \forall y\ (x \neq y \rightarrow \exists \mathrm{F}\ (\mathrm{F}x\ \&\ {\sim}\ \mathrm{F}y))$' are—speaking very strictly—meaningless. (Substitutional quantification is also meaningless, but for another reason entirely: no one has ever said what it means.) Those who recognize only nominal-variable quantification can easily "replace" those two sentences with the sentences

> $\forall x \forall y$ ($x$ is a proposition & $y$ is a proposition . → ($x$ is true ∨ ~ $y$ is true . → . $x$ is true → $y$ is true))
>
> $\forall x \forall y$ ($x \neq y \rightarrow \exists z$ ($z$ is a property & $x$ has $z$ & ~ $y$ has $z$)).

But there are predicative-variable sentences that are harder to find replacements for. The friends of predicative quantification have an easy solution to the problem, 'Find the thesis that follows from the each of following three statements in virtue of their common logical form (and would follow from any statement of that form):

> $\exists x \exists y$ ($x$ is north of $y$ & ~ $y$ is north of $x$)
> $\exists x \exists y\ (x > y\ \&\ {\sim}\ y > x)$
> $\exists x \exists y$ ($x$ is a parent of $y$ & ~ $y$ is a parent of $x$),'

that solution being, '"$\exists \mathrm{F} \exists x \exists y(\mathrm{F}xy\ \&\ {\sim}\ \mathrm{F}yx))$" follows from each of those statements by "particular predicative generalization"'.

But we who do not allow ourselves predicative quantification face a vexing and difficult problem if we try to find a parallel nominal-variable solution. Such a solution would certainly involve quantification over dyadic relations, and it is precisely at that point that that problem emerges. There is only one way to say of a proposition that it is true. There is only one way to say of an object that it has a certain property. But for some pairs of objects there are dyadic relations such that there are two ways to say of those objects that they enter into those relations. One easy way to see this is to devise an example that relies on names rather than variables and on names that are not quite so well known as 'Edinburgh' and 'London'. I happen to know that there are municipalities (whether towns or villages I do not know) in England called 'Upton Snodsbury' and 'Pucklechurch'. I have no idea where in England either is. But I do know that there are two ways for me to say of Upton Snodsbury and Pucklechurch that they enter into the relation 'north of', and that I say of them that they enter into it in one of these ways if I say that Upton Snodsbury is north of Pucklechurch, and in the other if and only if I say that Pucklechurch is north of Upton Snodsbury.

Obviously the nominal-variable solution to the above problem cannot be

$$\exists z \exists x \exists y \; (z \text{ is a dyadic relation } \& \; x \text{ and } y \text{ enter into } z \; \& \sim y \text{ and } x \text{ enter into } z)),$$

since '$x$ and $y$ enter into $z$ & ~ $y$ and $x$ enter into $z$' is a straightforward contradiction. What is needed (for a nominal-variable solution to the problem) is a way of adapting the distinction

> The "Upton Snodsbury is north of Pucklechurch" way of saying that Upton Snodsbury and Pucklechurch enter into 'north of'
>
> The "Pucklechurch is north of Upton Snodsbury" way of saying that Upton Snodsbury and Pucklechurch enter into 'north of'

to expressions containing only variables. The bulk of this chapter has been an attempt to provide such an adaptation, and that was done to provide the proponents of the thesis "Nominal variables are the only variables" with techniques that they will useful in translating "unreflective applications" of predicative-variable quantification into statements involving only nominal variables.

# VI

# Lightweight Platonism

## An Ontological Framework

**1.** This final chapter presents, in outline, a single, unified framework within which the conclusions of the five preceding chapters can be placed. It will, inevitably, contain some repetition of things said in the first five chapters. I'll try at least not to use the same words.

I will call this "framework" Lightweight Platonism. Lightweight Platonism comprises a meta-ontology and an ontology.

The meta-ontology incorporates the conviction that being is a *thin* concept. (And existence, since it is the same thing as being, is therefore a thin concept.) Heidegger has asked, "...is 'being' a mere word and its meaning a vapor, or is it the spiritual destiny of the West?"[1] One can see why he presents his readers with that opposition, for 'a mere word and a vapor' is the position of Nietzsche and 'spiritual destiny' is his own position and Nietzsche is one of the very few modern philosophers for whom Heidegger has any very great respect. However this may be, Heidegger has presented his readers with a false opposition. 'Being' is a word with a very precise meaning, not a vapor at all, and it is not the spiritual destiny of the West—not in the sense, which I take to be Heidegger's sense, that the spiritual destiny of the West is hostage to the West's undertaking to uncover the meaning of being. Being is an everyday concept, a hard-working concept, but it stands in no more intimate relation to the spiritual destiny of the West than does the concept of the antecedent of a conditional (or the concept of a planar projection or the concept of an accentual meter or...).

Both the thinness of the concept of being and the precision with which the concept of being can be defined are displayed in two facts (*I* say they're facts) about the open sentences in the following list: the fact that they are unambiguous and clear and the fact that each of them is necessarily co-extensive with each of the others.

$x$ exists
$\exists y\, y = x$
$x = x$
There is such a thing as $x$
It is not the case that everything is something other than $x$
The number of things that are identical with $x$ is greater than 0.

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[1] *Einführung in die Metaphysik*, p. 28.

*Being: A Study in Ontology*. Peter van Inwagen, Oxford University Press. © Peter van Inwagen 2023.
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(I do not mean to imply that these sentences all have the same meaning or that they are all interchangeable in every context. That is false. For example, 'Something is greater than 0' is a logical consequence of 'The number of things that are identical with the Taj Mahal is greater than 0', and is not a logical consequence of 'The Taj Mahal exists'.) The following open sentences

*x* exists in the strict and philosophical sense of 'exist'
*x* exists in the sense of 'exist' that pertains to ontological commitment
*x* exists in the metaphysically serious sense of 'exist'

cannot be said to be unambiguous and clear, but they stand in a certain intimate relation to an unambiguous and clear sentence: each of them means '*x* exists'—each is a pointlessly long-winded way of saying '*x* exists'—or it means nothing.

"But there are perfectly clear cases of a speaker's using 'exist' in a sense that is *not* metaphysically serious. For example, 'Differences of opinion have always existed in philosophy.' If someone said that, no member of his or her audience would exclaim, 'Ah, your ontology contains differences of opinion. What is the principle of individuation for differences of opinion? And what is it for one of them to be "in" a field of studies or discipline?'"

Someone's saying, "Differences of opinion have always existed in philosophy" is *not* a perfectly clear case of someone's using 'exist' in a sense that is not metaphysically serious. It is, rather, a perfectly clear case of a speaker's using a sentence whose syntax is not to be taken seriously—that is, of using noun-phrases in positions not subject to existential generalization. There is no reason for speakers immersed in the ordinary business of life always to mean the syntax of their sentences to be taken seriously, but if the members of some population did for some reason mean the syntax of their sentences to be taken seriously, they would simply not say, "Differences of opinion have always existed in philosophy." They would say, rather, something along the lines of, "It has always been the case that there were philosophers who disagreed with other philosophers."

Analogous extensional equivalences hold among various sentence-schemata, schemata whose dummy letters stand in for predicates and singular or plural count-nouns (or count-noun phrases). Thus, the following instances of some of these schemata express propositions that are true in the same possible worlds:

There are women who are more than two meters tall
Something is a woman who is more than two meters tall
Women who are more than two meters tall exist
Not everything is not a woman who is more than two meters tall
The number of women who are more than two meters tall is greater than 0.

One part of a meta-ontology is analysis of the concepts of being and existence; another is method in ontology.[2] The method I recommend is straightforward: it consists in an attempt to find out what entities our beliefs and our discourse commit us to. Science and police work can lead us to have today beliefs that are in no way, in no sense, contained in or dictated by the beliefs we had yesterday. And some of these beliefs we have today that are not consequences of the beliefs we had yesterday will be existential beliefs—a belief in the existence of a second murderer, for example, or a belief in the existence of a novel subatomic particle. (When the physicist Isidor Rabi was shown evidence for the existence of a particle that defied the then-current scheme of classification of particles, he exclaimed in annoyance, "Who ordered this?") But *philosophy* can tell us only one sort of thing about what exists: it can tell us only what "ontological commitments" might be hiding in beliefs that people have quite independently of the thoughts and writings of philosophers. Ontology is precisely the branch of philosophy whose business it is to extract philosophically interesting existential propositions from the beliefs of non-philosophers and from the beliefs philosophers bring to philosophy. First, a Quinean analysis of our discourse uncovers various roles that—that discourse presupposes—are played by something or other. Metaphysical reasoning then attempts to specify the properties that a "something or other" that could play those roles would have to have. A toy example of this method can be seen at work in David and Stephanie Lewis's "Holes." (Alas, real philosophical exchanges are seldom so neat.)

It may be hard to credit, but I have heard philosophers object to this characterization of ontology by saying things like, "You represent the subject-matter of ontology as the existential implications of people's *beliefs*—or of what they *say*. But, surely, the subject-matter of ontology is *what there really is*—and not simply what people *think* there is or *say* there is?" But if the proposition that there are numbers can be validly deduced from the proposition that the average density of the moon in kilograms per cubic meter is equal to its mass in kilograms divided by its volume in cubic meters, then the argument

> The average density of the moon in kilograms per cubic meter is equal to its mass in kilograms divided by its volume in cubic meters

*hence*,

> There are numbers

---

[2] In one sense of 'ontology'. The mass term 'ontology' can mean either 'The study whose topic is the nature of being and non-being and existence and non-existence' or 'The study that attempts to answer the question, "What is there?"' I prefer to use 'ontology' in the latter sense, and to assign questions about the nature of being to meta-ontology.

is valid. (And its conclusion is equivalent to 'Numbers are among the things that really are'.) If, therefore, you believe that the conclusion of this argument can be deduced from its premise *and* believe that the average density of the moon in kilograms per cubic meter is equal to its mass in kilograms divided by its volume in cubic meters, then I have presented you with an argument for the existence of numbers that—you will concede—is sound. Enough, I hope, said.

Of the ontological methods I *reject*, the most common—and the most productive of metaphysical writing of the sort that made logical positivism so attractive—is this: single out some feature of the world; declare that it requires a *metaphysical* explanation; provide and endorse a metaphysical explanation of that feature; if the explanation postulates entities of some sort (possibly entities well known in the history of philosophy, possibly entirely novel entities), declare the existence of the postulated entities proved.

For example:

> This blade of grass and this oak leaf and are both green. That is, although they are numerically distinct objects, they are identical in respect of color: they are identical *in a certain respect* without being identical full stop. The best explanation of this fact is that they have a common constituent—greenness or viridity. And this constituent is wholly present in them both. There being a common constituent of the two objects that is wholly present in them both explains how objects that are not identical can nevertheless be identical in a certain respect: a constituent of one and a constituent of the other are identical *sans phrase*. The theory that explains best describes best. Therefore, viridity (a certain immanent universal) is a real thing, a real constituent of the world.

In my view, this argument founders on the fact that there *is* no explanation of the common greenness of the blade and the leaf—or, rather, no metaphysical explanation of the sort that people who offer such arguments claim to present. For of course I don't deny that there are answers to the question, 'In virtue of what are the blade and the leaf both green?' For example:

—They both contain chlorophyll
—They both reflect incident light predominantly in wavelengths in the 500–560 nm range
—When human beings observe either of them in ambient light of a sort maximally effective for distinguishing the colors of things, they experience sensations of phenomenal green.

But metaphysicians who say the sort of thing contained in the offset passage above will say that none of those explanations are explanations of the sort they are speaking of. The following speech, I think, fairly represents their position.

> The interrogative sentence 'In virtue of what are the leaf and the blade both green?' is ambiguous. Statements like the three you have cited are certainly answers to some of the questions that that sentence might be used to ask. But they are not answers to the fundamental metaphysical question *we* are asking when *we* use it. Our question is a question about *any* properties the objects share, and *our* question 'In virtue of what are the blade and the leaf both green?' cannot be answered by an appeal to the actions of and interrelations among parts of the blade and the leaf that display other, more fundamental properties. We could (in principle) just as well have asked, 'In virtue of what do the leaf and the blade both reflect incident light predominantly in wavelengths in the 500–560 nm range?' And the answer to that question would have been couched in terms of the presence in both objects of a certain immanent universal (albeit not one we have a handy one-word name for), to wit the universal that's immanent in all and only those things that reflect incident light predominantly in the 500–560 nm wavelengths, and in virtue of whose presence in an object, that object reflects incident light predominantly in the 500–560 nm wavelengths'.

If I heard such a speech (it may be a fair representation of the position of many philosophers, but, as far as I know, it has been made only in my imagination), I should say in reply, "There are certainly answers to the question, 'In virtue of what do the leaf and the blade both reflect incident light predominantly in the 500–560 nm wavelengths?' They're rather complicated, but here goes. [Imagine here a longish and rather difficult explanation in terms of the interaction of photons and atomic electrons] But none of those answers is an explanation of the kind you claim to be able to supply."

This dialectic might go on for some time. But, as someone or other has said, "Explanations come to an end somewhere." Suppose my partner in dialectic and I have reached a point at which our topic is the explanation of the charge on the electron. Electra (for that is her name) quotes David Lewis:

> [Consider] two particles each having unit positive charge. Each one contains a non-spatiotemporal part corresponding to charge. [It is a universal and] the same universal for both particles. One and the same universal recurs; it is multiply located; it is wholly present in both particles, a shared common part whereby the two particles overlap. Being alike by sharing a universal is 'having something in common' in an absolutely literal sense.[3]

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[3] *On the Plurality of Worlds*, p. 64. Electra also takes pains to make it clear that in this passage Lewis is setting out, not affirming, a position.

“And, of course,” says Electra, “he could as well have said ‘negative charge’ as ‘positive charge’—and ‘negative charge’ is what I will say, since you and I are talking about the charge on the electron. And, yes, *that’s what it is* for two electrons to have the same charge: for them both to have one and the same ‘charge universal’ as a constituent. And *that’s what it is* for an electron to bear unit negative charge: for it to have the universal ‘unit negative charge as a constituent.”

And I for my part have (either in actuality or in the situation I’m imagining) no idea whether there’s some explanation of the fact that electrons are charged the way they are, and I therefore have no scientific explanation of that fact to contrast with Electra’s metaphysical explanation.

What I am sure of, however, is that Electra’s “metaphysical explanation” is not really a metaphysical explanation for it is not an explanation of any sort. It is not an explanation of any sort because it makes no sense. It makes no sense because it makes no sense to suppose that something called ‘the charge on the electron’ or ‘unit negative charge’ is a constituent of a physical thing. When I contemplate the fact that there are people who think it does make sense—and is even *true*—, I am simply bewildered. I will try (as I say far too often, but I’m afraid I find the stolen phrase irresistible) to evoke the appropriate sense of bewilderment.

Let us examine the sentence,

The charge on the electron is $-1.602176634 \times 10^{-19}$ coulombs.

This sentence belongs to a class of sentences other members of which are ‘The distance from Chicago to Salt Lake City is 1,400 miles’ and ‘The speed of sound in dry air at 20° C is 343 m/sec’ and ‘The volume of the water contained in Lake Michigan is 4,920 cubic kilometers’. How to parse such sentences is problematical. Quine tells us that the phrases that flank the word ‘is’ in these four sentences are defective nouns (“normally used only in a limited selection of the usual term positions”).[4] In my view, he is right. And if he is right ‘the charge on the electron’ is not really a denoting phrase (it does not occupy positions subject to existential generalization) and thus does not denote a constituent of electrons because it does not denote anything at all. But suppose Quine (and I) are wrong and that phrase does denote an object. If it denotes anything at all, if it is in the denoting business, it denotes an abstract object. (In what follows, I will assume for the sake of argument that ‘the charge on the electron’ denotes something.)

There are at least two reasons to think the referent of ‘the charge on the electron’ is an abstract object. First, it is a universal. The charge on the electron *is* the charge on the muon—just as the distance from Chicago to Salt Lake City *is* the diameter of Pluto. (If all three of the following phrases are names, then all three of 'the charge on the electron', 'the charge on the muon', and '–1.602176634 $\times 10^{-19}$ coulombs' are names of the same abstract object; if all three of the phrases, 'the distance from Chicago to Salt Lake City', 'the diameter of Pluto', and '1,400 miles' are names, they are all names of the same abstract object. But I would expect someone of Electra's persuasion to say that, if these statements are understood properly, she agrees with them. "After all," she says in my imagination, "the universal 'unit negative charge' is wholly present in every electron *and* every muon. And the mereological sum of any 6241509074460762000 (the reciprocal of $1.602176634 \times 10^{-19}$) electrons bears a charge of minus 1 coulomb, which is wholly present in that sum. As for the '1,400 miles' example, say that the *extent* of an object is the greatest distance between any two of its parts. Then the universal 'having an extent of 1,400 miles is immanent in both Pluto and the mereological sum of Chicago and Salt Lake City."

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[4] W. V. O. Quine, *Word and Object*, p. 244.

So: I maintain that the referent of 'the charge on the electron' is an abstract object (and therefore not a constituent of any electron) because it is a universal. Electra maintains that the referent of 'the charge on the electron' is a universal and a constituent of every electron (and every muon and every anti-proton and . . . ) and therefore not an abstract object. (Or, at any rate, therefore not an abstract object if an abstract object is anything like a number or a proposition or a pure set.) I won't press the point, for my *principal* reason for supposing that "the charge on the electron," if it is an object at all, is an abstract object (as abstract as a proposition or a tax rate), is not that it is a universal. It is rather that it is a physical quantity—an item that belongs to the same ontological category as spatial and temporal displacements, areas, volumes, velocities, accelerations, masses, densities, moments of inertia, energies, magnetic moments, torques . . . . And physical quantities are things to which mathematical operations can be applied. The volumes of the water in each of the five American Great Lakes can be added—their sum of course being the volume of the water contained in the five Great Lakes. Physical quantities can be multiplied or divided by other physical quantities, even ones not of the same sort: only volumes can be added to or subtracted from volumes, but a mass can be divided by a volume to yield a density and a density can be multiplied by a number to yield a density: if you multiply the physical quantity called variously 'the mean density of the moon', 'the density of calcium oxide', and '3.34 g/cm$^3$' by 2, the result will be another physical quantity, another density, one called '6.68 g/cm$^3$' and 'the density of zinc' and 'a density twice the mean density of the moon'. And the physical quantity that is our present concern, the physical quantity called (among other things) 'the charge on the electron', 'unit negative charge', and '–1.602176634 $\times 10^{-19}$ coulombs', can be divided or multiplied by a number and divided or multiplied by a physical quantity. If you divide it or multiply it by a number, the result will be a charge. If you multiply it by a physical quantity or divide it by a physical quantity (other than a charge), the result will be a physical quantity of some other sort. If, for example, you divide it by 3, the result will answer to the names 'one third the charge on the electron', 'the charge on the down quark', and '$-5.34058878 \times 10^{-18}$ coulombs'. And if you divide energy by charge, the quotient is electrical potential.

Now let's do something a little more elaborate. Let us take negative unit charge and square it, divide the result by the distance 1 nanometer, divide *that* result by the distance 1 nanometer, and multiply the result of that second division by 8.988 newton-meters squared per coulomb squared. The issue of your labors will be an entity called by various names, among them '$2.30719260621565 \times 10^{-17}$ kg-m/sec$^2$', 'the magnitude of the repulsive force two electrons exert on each other if they are 1 nanometer apart', 'the magnitude of the repulsive force two protons exert on each other if they are 1 nanometer apart', and '$2.352681707 \times 10^{-18}$ kilograms weight'.

I can make no sense of the idea that an entity on which mathematical operations can be performed—a thing that can be a subtrahend and a multiplicand and a divisor—is an entity that can be a constituent of a visible, tangible thing. I can, in fact, see no alternative to a principle I might call the principle of the uniformity of composition: Any things that are, in any sense the word could possibly bear, constituents of an object must belong to the same ontological category as that object. And that principle is—if it does not entail—at least extremely friendly to the (so to call it) "constituency is parthood" thesis:

> The only constituents of any concrete object are those things that are its parts in the strict and mereological sense.

For present purposes, however, it is not necessary for me to defend these two theses. I will content myself with the premise that an object cannot be a constituent of a physical thing if mathematical operations can be performed on it. (If you are spinning a weight on the end of a bit of string, the speed at which the weight is moving is equal to the square root of the ratio of the product of the tension in the string and its length to the mass of the weight. A planet's orbital velocity equals its escape velocity divided by the square root of 2. The power emitted in the form of radiation by an accelerated charged particle is proportionate to the square of its charge.)

I maintain, moreover, that not only is Electra's answer to the question 'In virtue of what are the blade of grass and the oak leaf both green?' meaningless, but the question itself is meaningless. I maintain that not only is Electra's explanation of the fact that the blade and the leaf meaningless, but the idea of there being an explanation of the kind she proposes to supply is meaningless. There is a sufficiency of explanations of the fact that the blade and the leaf are both green, but they are all either ordinary, everyday explanations or scientific explanations. I maintain that of all combinations of English words and phrases (present, say, in the mind of God) none of them is a metaphysical explanation of the fact that the blade and the leaf are both green.

I (pretty obviously) do not say these things as an enemy of metaphysics. I claim, rather, to be saying them as a friend, a friend who is trying to save metaphysics from a wrong picture, apparently in recent years increasingly popular among metaphysicians, of how metaphysics should be done. My message of reform is a simple one: argument, not explanation, is the business of metaphysics. What metaphysicians should do is to propound theses and defend them. ("But how will you discover which theses to propound and defend?" ask the friends of metaphysical explanation. And they go on to say, "*We*, at least, have an answer to that question. The theses to propound and defend are those that figure in the best metaphysical explanations." And I reply, "There *are* no best metaphysical explanations, for there are no metaphysical explanations at all.[5] As to your *question*, I don't know the answer to it, but I also don't know how to answer the parallel question about ethics or epistemology or the philosophy of mind. In metaphysics, as in any other part of philosophy, one finds oneself with certain convictions. One examines one's metaphysical convictions. One enquires into the logical relations they bear to one another. One searches out and attempts to evaluate arguments for and against each of them. One attempts to achieve reflective equilibrium."

One might indeed wish that there were something better than this, some method that might be used by metaphysicians that led to widespread agreement among metaphysicians about the answers to fundamental metaphysical questions. For this method does not lead to uniformity of opinion among metaphysicians. Metaphysics, like almost all of philosophy, is argument without end, and if two metaphysicians agree about a wide range of metaphysical issues, then, almost certainly, one of them was a student of the other. This fact raises some interesting (and perhaps disquieting) questions about the epistemology of metaphysics (and, indeed, of philosophy)[6] but it does not favor either of the two theses

> In metaphysics, one formulates, propounds, and defends metaphysical explanations of various facts
>
> In metaphysics, one formulates, propounds, and defends arguments (and never arguments of the kind called "inferences to the best explanation") for various metaphysical propositions

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[5] That will do for a slogan. But 'explanation' is a protean word. Have I not, by my own testimony, in the sentence to which this note is appended, explained why there are no best metaphysical explanations? (If I admit this, I need not accuse myself of pragmatic contradiction, for it may be that the meaning of 'explained' and the meaning of 'explanation' in the previous sentence are related only by analogy.)

[6] For further reflections on this topic, see my essays "Freedom to Break the Laws," and "Listening to Clifford's Ghost."

over the other.

**2.** I said above that in the matter of answering "the ontological question,"—'What is there?'—,

> philosophy can tell us only one sort of thing about what exists: it can tell us only what "ontological commitments" might be hiding in beliefs that people have quite independently of the thoughts and writings of philosophers. Ontology is precisely the branch of philosophy whose business it is to extract philosophically interesting existential propositions from the beliefs of non-philosophers and from the beliefs philosophers bring to philosophy. First, a Quinean analysis of our discourse uncovers, or attempts to uncover, various roles that—that discourse presupposes—are filled by something or other. Metaphysical reasoning then attempts to specify the properties that a "something or other" that could play those roles would have to have.

Metaphysical reasoning has convinced *me* that every role a Quinean analysis of our discourse uncovers can be played by objects in one or the other of the following two kinds (which are broad and general enough that there can be no objection to calling them "ontological categories"):

—objects to which the following descriptions apply: 'abstract object', 'relation',[7] 'anetiological or non-causal object', 'universal'.

—objects to which the following descriptions apply: 'substance', 'concrete object', 'causal object', 'particular', 'individual'.

I contend, moreover, that all objects in the first category are necessarily existent, and that objects in the second category are generally contingent. (But there may be one Exception to the latter generalization.) I do not contend that any relation stronger than "necessarily co-extensive with" holds among the terms in each of the two lists: 'abstract object' does not *mean* 'universal', and that something is an abstract object if and only if it is a universal is a substantive philosophical thesis.

It will be observed that there are some conspicuous absences from the lists of general terms that I have used to specify the membership of the two categories. We may cite:

—facts and states of affairs
—states (as in "mental state" and "physical state")
—physical quantities: masses, charges, forces...

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[7] "Relations" include propositions (0-term relations), properties or attributes (monadic relations), proper relations (dyadic, triadic, tetradic... relations), and multigrade relations ("teach at the same university," "are members of the CDU"...).

—kinds (natural or otherwise): species, genera, taxa
—immanent universals
—tropes or individual accidents or property instances
—bare particulars or substrates
—mathematical entities: sets, numbers, vectors, functions, operators…
—events (or changes) and processes
—moments and intervals of time
—spatial points and lines and regions
—points in and regions of space-time
—stuffs and quantities of stuff: water; a half-liter of water; the half-liter of water in this bottle
—"derivative entities" or "ontological parasites" or "modes of substance": holes, cavities or hollows, surfaces, waves, shadows, reflections…
—mental/perceptual/intentional entities (other than immaterial mental substances like Cartesian egos): pains, qualia, sensations, sense data, thoughts, episodes of reasoning, the witch that Hob thought had blighted his crop…
—linguistic entities: word-tokens, sentence-types, questions, tenses, languages…
—social entities: married couples, universities, football teams, political parties, religions,
nations…

I would make various replies to a protest against any given one of these absences. In the most extreme case, I would say that the absence of that item was no absence at all because the language used to describe the supposedly missing item is meaningless. 'Immanent universal', 'trope', and 'bare particular' in my view mean nothing. (I do not mean to imply that the many philosophers who use these terms and who think they denote real and important things are stupid or are bad at philosophy. On the contrary: only a highly intelligent and very able philosopher could be so deceived. Cf. Orwell: "One has to belong to the intelligentsia to believe things like that.") By contrast, I find 'event' and 'political party' and 'hole' perfectly intelligible: I simply think that there are no such things. (In such cases, I am almost never willing to be an "error theorist" as regards the occurrences in everyday speech of sentences like 'The sequence of events leading up to the Challenger disaster is now well documented' and 'The leaders of some political parties do not understand the importance of social media in electoral politics' and 'There are as many holes in this piece of cheese as there are crackers on that plate'. I regard these sentences as expressing truths but in a way disguised by their syntax. See the remark about the sentence 'Differences of opinion have always existed in philosophy' above.) The absence of events is perhaps a more serious absence—as metaphysicians judge absences—than the absence of political parties. One consequence of their absence that it obliges me to find some "non-Davidsonian" way of accounting for the validity of the inference 'Sebastian strolled through the streets of Bologna at 2 a.m. Therefore, Sebastian strolled through the streets of Bologna'. Another is that my account of causation and causal processes must be radically non-Humean—that is, my analysis of the content of (for example) 'The eruption of Mt. St. Helens caused fires, floods, mudslides, and over fifty deaths' must imply neither that the statement is false nor that there are such things as eruptions, fires, floods, mudslides, and deaths.

A third class of absences is characterized by my being uncertain what sorts of thing those who use the terms in question would be willing to accept as their referents. My primary example in this case is 'state'. Philosophers of mind talk of "mental states" and "physical states." But what would be an example of a state—a mental state, let's say? Let us consider a concrete example of a statement about what is going on in someone's mind. Imagine that someone asks me what Sara Bernstein is doing at the present moment, and I reply, "Sara is thinking about the paradoxes of time travel." In my view, both the following statements are obvious consequences of what I have said: I have described Sara's mental state (if only in part); I have ascribed a mental property to Sara. This pair of apparently trivial statements raises a decidedly non-trivial question: What is the relation between the state and the property? I do not mean here to attempt to answer that question—it would be better addressed as the topic of a chapter in a book called *Metaphysics for Philosophers of Mind*—I mean only to say that unless the philosophers who speak of mental (and physical) states can answer it, they haven't really said what they mean by 'state', and the case reduces to the first case we have considered. If they say that the mental state one is in just in the case that one is thinking about the paradoxes of time travel *is* the attribute being an *x* such that *x* is thinking about the paradoxes of time travel, then, of course, mental (and physical) states are not absent from my ontology. But it's very unlikely that the friends of mental states will agree to any such identification, for that would mean that one's mental states were numerically, and not merely descriptively, identical with those of one's Twin-Earth *Dopplegänger*. What is perhaps worse is that it would mean that the mental state "thinking about the paradoxes of time travel" exists at all times and in all possible worlds, including those worlds in which there are never any thinking beings.[8] (That is, it would if I am right to suppose that all attributes are necessarily existent.) And—worst of all—it would mean that mental states are without causal powers. No philosopher of mind with whom I have discussed this question has been willing to ascribe such features to mental states. If, finally, they say that mental states are short-lived contingently existing things that have causal powers and that each mental state is the mental state of exactly one thing, I say that there are no such things—and the “mental states” absence is of the same kind as the “events” and “political parties” and “holes” absences.

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[8] It does not follow, however, that it is a mental state in every world in which it exists. Perhaps the property "thinking about the paradoxes of time travel" is a mental state in and only in those worlds in which it is instantiated.

There are perhaps no better examples of Quinean “roles” that are *demonstrably* present in our discourse and which demand to be filled than the “mathematical objects” roles—the “set” role, the “number” role, the “function” role, and so on. But in this case, metaphysical reasoning can present us with a plethora of kinds of object that can play each of these roles. Take for example the “positive integers” role. I will give an example of a kind of object that can play this role. (And, of course, since it is *my* example, it cannot consist in the statement that the number role is played by certain *sets* à la Frege or à la von Neumann.)

Some of the relations that the category “abstract objects” comprises are multigrade relations—relations expressed by sentences containing free plural variables.[9] Now consider the following sequence of expressions.

The number 1 is the relation expressed by the sentence

$\exists y\ (y \text{ is one of the } x\text{s} \ \&\ \forall z\ (z \text{ is one of the } x\text{s} \rightarrow z = y))$

The number 2 is the relation expressed by the sentence

$\exists y\ \exists z\ (y \text{ is one of the } x\text{s} \ \&\ z \text{ is one of the } x\text{s} \ \&\ y \neq z \ \&\ \forall w\ (w \text{ is one of the } x\text{s} \rightarrow .\ w = y \vee w = z))$

The number 3 is the relation expressed by the sentence

$\exists y\ \exists z\ \exists w\ (y \text{ is one of the } x\text{s} \ \&\ z \text{ is one of the } x\text{s} \ \&\ w \text{ is one of the } x\text{s} \ \&\ y \neq z \ \&\ y \neq w \ \&\ z \neq w \ \&\ \forall v\ (v \text{ is one of the } x\text{s} \rightarrow .\ v = y \vee v = z \vee v = z))$

$\vdots$

This sequence provides the intuitive basis for an ontology of the positive integers according to which each positive integer is a multigrade relation. The friends of any such ontology have non-trivial problems to solve—for example, the problem of defining ‘successor of’ in such a way that the relation identified as the number 2 is the successor of the relation identified as the number 1, and the relation identified as the number 3 is the successor of the relation identified as the number 2, and so on. But, supposing that these problems can be solved, it is evident that there are other ways than this of identifying numbers with relations. To pick a rather extreme example, the number 1 might be identified with the property of being a one-legged thing (or a monopod), the number 2 with the property of being a dipod (or biped), the number 3 with the property of being a tripod, the number 4 with the property of being a tetrapod (or quadruped), and so on. Or (an example extreme in another way) the number 1 might be identified with the relation expressed by the open sentence in the second item of the above sequence, the number 2 with the relation expressed by the open sentence in its fourth item, the number 3 with the relation expressed by the open sentence in its sixth item, and so on.

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[9] See my *Material Beings*, pp. 24–28.

It is therefore literally true but perhaps misleading to say that my ontology does not include the positive integers. It would be more informative to say that my ontology does not include things that are intrinsically positive integers, things that are *sui generis* positive integers. (It is, I concede, not easy to say what the statement 'There are things that are intrinsically positive integers' means. I will say just this: If that statement is true, then there exists a certain object such that it follows (independently of any human speech or thought or convention) from the truth of the sentence '$\exists x \exists y$ ($x$ is a Martian moon & $y$ is a Martian moon & $x \neq y$ & $\forall z$ ($z$ is a Martian moon $\rightarrow z = x \vee z = y$))' that 'The number of Martian moons' denotes that object.)

Another "ontological absence" of this type is the absence (*sc.* from my ontology) of moments of time. But what is absent is items that are intrinsically moments of time, *sui generis* moments of time. I am content to say that certain relations might be pressed into service to do the work that has been assigned to moments of time. For example, assuming that we have been able to find a way to identify real numbers with relations, we might stipulate that the moment of time $R$ seconds after the Big Bang (a "second" being understood in the way prescribed by the 2019 redefinition of the SI base units) is simply the real number $R$ itself.

I am therefore committed to the following position about the items in the list of absences. Each of them is of at least one of the following four sorts:

—it is no real absence because the words used to describe the missing category are meaningless

—it is a desirable and in any case inevitable absence because there are no such things as the members of that category

—"well, it all depends on what you mean by . . ."; in one possible sense of certain of the terms used to describe the missing category, its members could be relations, but in other possible senses they could not be relations

—there are no things that are intrinsically members of that category, but various classes of relations can play the roles that members of that category are supposed to play.

The absence of numbers is of both the third and the fourth sort—as is the absence of moments of time. As to the third category: if by numbers one means things that are intrinsically numbers, then, in that sense, no relation is a number, and numbers do not exist.

**3.** "It was not quite honest of you to classify the absence of sets from your ontology as a special case of the absence of mathematical entities, and then to go on to say no more about how you would deal with the fact that your ontology includes no abstract objects but relations than how you would use certain relations to do the work most of us suppose is done by the positive integers. It would be much more interesting to hear how you propose to get along without sets."

One philosopher who faced the problem the Interlocutor has raised was Roderick Chisholm, who proposed the following solution to it—a solution based on Russell's "no class" theory:

> [W]e can interpret 'The class of things that are *F* is *G*' as telling us this: For every property *H*, if *H* is exemplified by all and only the things that exemplify the property of being *F*, then *H* has the property of being *G*'.[10]

—a statement I can't resist rewriting a bit in the interests of both simplicity and parallel construction (and while I'm at it I'll substitute 'set' for Chisholm's 'class'):

> We can interpret 'The set of things that are *F* is *G*' as telling us this: 'For every property *H*, if all and only the things that are *F* have *H*, then *H* is *G*'

This solution faces an obvious problem. If we take it literally, it implies that we can interpret 'The set of human beings has only finite subsets' as telling us that (given that something is a human being if and only if it is a rational animal) the property of being a rational animal has only finite subsets. But this is a trivial, verbal problem. And there is no point in solving it, because Chisholm's solution faces another difficulty—a difficulty that is so far from being trivial and verbal as to be insurmountable.

Let's rewrite his principle a second time, this time to frame it so as to make its ontological implications absolutely clear.

> For any predicates F and G, we can interpret the sentence $\ulcorner \mathrm{G}\{x \mid \mathrm{F}x\} \urcorner$ as saying the same thing as the sentence $\ulcorner \forall x\ (x \text{ is a property} \ \&\ \forall y\ (\mathrm{F}y \leftrightarrow y \text{ has } x)\ .\rightarrow \mathrm{G}x \urcorner$.

What Chisholm's solution amounts to is a method of eliminating from our discourse all sentences of the form

> $\mathrm{G}\{x \mid \mathrm{F}x\}$.

But not all sentences in the language of set theory are of this form and there are therefore sentences in the language of set theory that Chisholm's proposal does not show us how to deal with; it does not, that is, show us how to replace them with sentences whose variables range over properties rather than over sets. Consider, for example, the definiens of the famous definition

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[10] *The First Person: An Essay on Reference and Intentionality*, p. 8.

$$x \text{ is an ancestor of } y =_{df} \forall z\,(y \in z \mathbin{\&} \forall v \forall w\,(w \in z \mathbin{\&} v \text{ is a parent of } w\,.\!\rightarrow v \in z)\,.\!\rightarrow x \in z).$$

What we need is not, for any predicates G and F, a sentence with which to replace $\ulcorner \mathrm{G}\{x|\mathrm{F}x\}\urcorner$. What we need is a sentence with which to replace '$x \in y$'.[11]

Our need can be supplied, and in a variety of ways. Suppose, for example, that we replace reference to non-empty sets with reference to disjunctions of instantiated haecceities.[12] (And replace reference to the empty set with reference to some arbitrarily chosen impossible property *N*—non-self-identity, let us say.) So, for example, reference to {Socrates, Plato} will be replaced with reference to the disjunction of the haecceities of those two philosophers—that is, to the property of being either Socrates or Plato. (And we ordain that every haecceity is both a disjunction of haecceities and a disjunct of a disjunction of haecceities: for we ordain that every haecceity shall be said to be the disjunction of the haecceities with which it is identical.)

If we are to implement this idea successfully, we shall need to make three assumptions:

> That everything has exactly one haecceity. (We abbreviate, e.g. 'the haecceity of Plato' as 'H(Plato)'.)
>
> That, for any haecceities, if those haecceities have a disjunction, it is their only disjunction. (Thus, if the property of being either Socrates or Plato is the disjunction of H(Socrates) and H(Plato)—abbreviated 'D (H(Socrates), H (Plato))'—and if the property of not being Aristotle and being either Socrates or Plato is not the property of being either Socrates or Plato, then the property of not being Aristotle and being either Socrates or Plato is not D (H(Socrates), H(Plato)), although it is necessarily co-extensive with that disjunction.)
>
> That for any *x*s and any *y*s, if the *x*s and the *y*s are instantiated haecceities and D*x*s and D*y*s exist, then D*x*s = D*y*s if and only the *x*s are identical with the *y*s.

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[11] And perhaps we should remember that the curly brackets are not generally treated as primitives of set theory. If the primitive vocabulary of set theory consists of '$\in$', and '$\varnothing$' (and the vocabulary of quantifier logic with identity and definite descriptions), then the curly brackets notation is introduced by some such definition as

$$\{x\,|\mathrm{F}x\} =_{df} \iota x\,((\exists y\, y \in x\,.\vee\, x = \varnothing) \mathbin{\&} \forall y\,(y \in x \leftrightarrow \mathrm{F}y)).$$

So we might even say that, although what we need is a replacement for '$x \in y$', Chisholm has provided us only with, for all predicates F and G, a replacement for

$$\ulcorner \mathrm{G}(\iota x\,((\exists y\, y \in x\,.\vee\, x = \varnothing) \mathbin{\&} \forall y\,(y \in x \leftrightarrow \mathrm{F}y)))\urcorner.$$

[12] Remember that in Section 7 of Chapter III, the haecceity *of* something was defined the property of being that thing, and that *an* haecceity was defined as a property that is possibly the haecceity of something.

> (So, for example, if there is such a property as the property of being either Locke or Berkeley or Hume, and if it is D(H(Locke), H(Berkeley), H(Hume)), then it is also D(the haecceities of the British Empiricists), D(H(Berkeley), H(Hume), H(Locke)), and D(H(the author of *An Essay Concerning Human Understanding*), H(the Bishop of Cloyne in 1735), and H(the most famous philosopher who was born and died in Edinburgh).)

Where $N$ is the impossible property we have chosen, we may replace '$x$ is a set' with

> $x = N \vee$ for some $y$s (the $y$s are haecceities & $\forall z$ ($z$ is one of the $y$s $\rightarrow \exists w\, w$ has $z$) & $x$ is a disjunction of the $y$s),

and '$x \in y$' with

> For some $z$s, (the $z$s are haecceities & $\forall w$ ($w$ is one of the $z$s $\rightarrow \exists v\, v$ has $w$) & $y$ is a disjunction of the $z$s & $x$ has $y$[13]).

That is, we may replace 'is a set' with 'is either the stipulated impossible property $N$ or a disjunction of instantiated haecceities' and we may replace '$x$ is a member of $y$' with '$y$ is a disjunction of instantiated haecceities, one of which is the haecceity of $x$' or '$y$ is a disjunction of instantiated haecceities, and $x$ has $y$'.

But which haecceities have disjunctions? That is, what is the rule that determines, for any haecceities, the $x$s, whether those haecceities have a disjunction? This question is strictly parallel to the question 'What is the rule that determines, for any objects, the $x$s, whether those objects form a set?'. The strongest possible answer to the latter question is the "unrestricted comprehension principle":

> For any objects, there is a set whose members are those objects.

And, as every schoolchild knows, this answer implies a contradiction. This is easily shown. Let a set be called 'ordinary' if (and only if) it is not a member of itself. There are ordinary sets—the empty set if no other. That there are ordinary sets and the unrestricted comprehension principle together imply that

> There is a set whose members are the ordinary sets.

And a set whose members are the ordinary sets is, if ordinary, a member of itself and hence not ordinary; moreover, a set whose members are the ordinary sets is, if not ordinary, not a member of itself, and hence ordinary. The unrestricted comprehension principle therefore implies a contradiction.

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[13] Or '$x$ instantiates $y$' or '$x$ exemplifies $y$' or '$y$ is a property of $x$' or '$y$ is true of $x$'.

The strongest possible answer to the question ‘Which haecceities have disjunctions?’ is

Just any haecceities have a disjunction

or

For any $x$s, (those $x$s are haecceities $\rightarrow \exists y\; y = \mathrm{D}\;(x\mathrm{s})$).

Let us call this the unrestricted disjunction principle. Like the unrestricted comprehension principle, the unrestricted disjunction principle implies a contradiction. And this, too, is easily shown. (And the proof is very similar to the proof of ‘The unrestricted comprehension principle implies a contradiction’.) Let us say that a disjunction of haecceities is ‘regular’ if its haecceity is not one of its disjuncts. That is,

$\mathrm{D}(x\mathrm{s})$ is regular $=_{df}$ $\mathrm{H}(\mathrm{D}(x\mathrm{s}))$ is not one of the $x$s.

It is obvious that if D(H(Plato), H(Socrates)) exists (as we have assumed) it is regular—for H(D(H(Plato), H(Socrates))) is neither H(Plato) nor H(Socrates). There are, therefore, regular disjunctions of haecceities. Let us say that the haecceity of a regular disjunction of haecceities is a regular haecceitiy.

If there are regular haecceities, that, together with the unrestricted disjunction principle, implies

The regular haecceities have a disjunction.

Is this disjunction regular? If it is, its haecceity is one of its disjuncts and it is not regular. If it is not, its haecceity is not one of its disjuncts, and it is regular.

I would make the following claim. Take Zermelo-Fraenkel set theory (with or without the Axiom of Choice, as it pleases you). Add, if you like, an ur-element axiom—something like

$\exists x\; (\sim\exists y\; y \in x\; .\; \&\; x \neq \varnothing)$.

Write out the axioms (in primitive notation). In these axioms, substitute ‘$N$’ for ‘$\varnothing$’ and

$x \varepsilon y =_{df} y = N \vee$ for some $z$s (the $z$s are instantiated haecceities & $y = \mathrm{D}(zs)$) . & $x$ has $y$

for

$x \in y$

throughout. If you have made your peace with the three assumptions listed above and if you find the axioms of set theory plausible, you will find these "replacement" axioms at least reasonably plausible.

Let us say that things that are either $N$ or disjunctions of instantiated haecceities are "ersatz sets."

There are at least two interesting philosophical consequences of replacing reference to sets with reference to ersatz sets. The first has to do with sets with fewer than two members—the empty set and the unit sets or singletons. Everyone will concede that it can be rather difficult to say what the empty set is—the set that is the intersection of sets that do not intersect and is a subset of every set. And as to singletons, the mystery they present is well brought out by the formulation of the theory of classes in David Lewis's *Parts of Classes*.[14] In Ludovician class theory, a *class* is a fusion of singletons (with one exception: the fusion of all things that have no singletons as parts is a class, to wit, the empty class), and a thing is a *member* of a class just in the case that its singleton is a part of that class. The *subclasses* of a class are its parts and the empty class. A *set* is a class that has a singleton. The ideology of Ludovician class theory thus comprises the operator 'the singleton of', the predicate 'is a part of', and the apparatus of quantifier logic. Only 'the singleton of' is unique to class theory. If we understand mereology we understand quantification theory. Therefore, if we understand mereology and 'the singleton of' we understand class theory, and if we understand class theory we understand set theory. But *do* we understand 'the singleton of'? It's hard to suppose we do—for the intrinsic properties of the singleton of Socrates and the reason Socrates bears the membership relation to the thing that is the unique bearer of those properties—whatever they may be—remain mysterious.[15]

If singleton sets are mysterious in Ludovician class theory, they are no less mysterious in standard set theory. What, in the final analysis, *is* {Socrates}? If this question does not strike you as both deserving an answer and lacking an answer, that is because you are so "used to" set theory that you have never felt the need to raise any *simple* philosophical questions about it (if you have asked yourself questions about set theory, they are questions like "Is the continuum hypothesis either objectively true or objectively false?" and "Are there inaccessible cardinals?").[16]

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[14] David Lewis, *Parts of Classes*. See particularly pp. 1–18 and 29–41.

[15] A thing is (by definition) a member of a class just in the case that its singleton is a part of that class. So in a sense the reason why Socrates is a member of his singleton is no mystery at all—for obviously his singleton is a part of *itself*. To meet this point, we might state the second mystery this way: what are the properties of singletons that allow class membership to be so defined?

But if the empty set and singleton sets are mysterious, their ersatz-set analogues are not, or at least they are mysterious only because they are properties or attributes. The ersatz analogue of the empty set is the property of non-self-identity (or some other arbitrarily chosen impossible property). And the ersatz analogue of {Plato} is the property of being Plato—the property Socrates and Simmias both ascribed to the mist-shrouded figure approaching them and their party one foggy morning in the Agora, when Socrates said, "It is Plato who approaches us," and Simmias added, "Socrates is not mistaken. That is indeed Plato." If the ersatz analogue of

$$\text{Plato} \in \{\text{Plato}\}$$

is

$$\text{Plato}\ \varepsilon\ \{\text{Plato}\}$$

(where

$$\{x\} =_{df} \iota y\, \forall z\, (z\ \varepsilon\ y \leftrightarrow z = x)),$$

then the truth of the ersatz analogue of 'Plato ∈ {Plato}' is no more puzzling than the fact that, if Plato is approaching a group of people, and if one member of that group says to the others, "It is Plato who approaches us," what the speaker says is true.

I promised two interesting philosophical consequences of replacing reference to sets with reference to ersatz sets. The second of these pertains to a matter that, by the terms laid down in the Preface, I have no business discussing in this book. I have, however, decided to include it because it is an integral part of what I want to say about the consequences of replacing reference to sets with reference to ersatz sets. And this matter is the question of the reality of ontological grounding.

Here is an influential argument:

> The set {Socrates} and the human being Socrates exist in exactly the same possible worlds. And yet the existence of {Socrates} is grounded in the existence of Socrates—and not *vice versa*. So ontological grounding, the grounding of the existence of one object in the existence of another ontologically more fundamental object, is a real feature of the world.

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[16] There are of course versions of set theory that identify singletons whose member is an individual (a non-set) with that individual. But these offer no real escape from this question. For we may still ask, Given that we know what {Socrates, Plato} is, do we know what {{Socrates, Plato}} is?

This argument is, or so I would contend, both the only plausible argument for the reality of ontological grounding *and* a very powerful argument for that conclusion—an argument so powerful as to be unanswerable if there are sets. But suppose I deny the existence of sets, or better, suppose I leave it an open question whether sets exist and say that (a) whenever I appeal to sets in my own work, I am to be understood as covertly appealing to ersatz sets (I am speaking with the learned vulgar when I appear to refer to or quantify over sets), and (b) I propose to understand everyone else's applications of set theory in the same terms. (I distinguish philosophical applications of set theory from philosophical arguments that have premises that ascribe to sets features that cannot be stated in the language of set theory. If a philosopher writes, "Let us say that an array of tiles is *connected* if any two of those tiles bear the ancestral of the relation 'touches' to each other," that statement contains an *application* of set theory. The above offset argument is not an application of set theory; it is rather an argument that has "premises that ascribe to sets features that cannot be stated in the language of set theory.")

Let us ask: is the ersatz set {Socrates} grounded in Socrates or in his existence? It would seem not, for, whatever ontological grounding may be, and I have no very firm grasp of the concept, it must—surely?—obey this rule:

> If the object *x* is ontologically grounded in the object *y*, then if *y* did not exist, *x* would not exist.

And the following statement is false:

> If Socrates did not exist, {Socrates} would not exist

—just as

> If Socrates did not exist, his mother would not exist

is false. It is, of course, true that if Socrates did not exist, his mother (the midwife Phaenarete) would not be his mother, but she'd still *be there*; she exists in the closest worlds in which Socrates does not exist.

And, by an exactly parallel argument, if Socrates did not exist, his ersatz singleton ({Socrates}) would not be his ersatz singleton, but it would still *be there*. (For an haecceity is an ersatz set[17] just in the case that it's instantiated. An uninstantiated haecceity is a thing that isn't an ersatz set but could be one.) One could certainly say that although the being or existence of ⦃Socrates⦄ is not grounded in Socrates, its being an ersatz set whose sole "member" is Socrates is grounded in Socrates. But to say that would be to acknowledge a case of factual, as opposed to ontological, grounding—like the grounding of mental facts in physical facts. I have no objection to factual grounding (although I suspect that it is nothing other than our old friend supervenience).

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[17] Our definition of 'ersatz set' implies that a non-empty ersatz set is a disjunction of instantiated haecceities. But, for any haecceity—we have said—the disjunction of the haecceities identical with that haecceity is that haecceity itself. That is, any $x$, if $x$ is an haecceity, then $x = \iota y$ (for some $zs$ ($y = \mathrm{D}(zs)$ & $\forall w$ ($w$ is one of the $zs \leftrightarrow w = x$)). Thus, an instantiated haecceity is "automatically" a disjunction of instantiated haecceities.

**4.** This completes the outline of Lightweight Platonism, the ontological framework to which the ontological and meta-ontological investigations that make up the previous five chapters belong.[18]

The framework is a platonism because it affirms the existence of propositions, attributes, and relations—all of which are *universalia ante res*. It is a *lightweight* platonism because these entities, these assertibles, are without causal powers: they can be neither agents nor patients.

In a footnote to Chapter III, I alluded to the famous definition of reality offered by the Eleatic Stranger (*Sophist*, 247E). In Cornford's translation:

> I suggest that anything has real being that is so constituted as to possess any sort of power either to affect anything else or to be affected, in however small a degree, by the most insignificant agent, though it be only once. I am proposing as a mark to distinguish real things that they are nothing but power.

By the Stranger's criterion, my propositions, properties, and relations (assertibles, saturated and unsaturated) are not real things *(τὰ ὄντα)*. I am not in a position to pronounce on the strengths and weaknesses of 'real things' as a translation of '*τὰ ὄντα*'—although I do wonder whether 'real things' is a better translation than 'beings'. Nevertheless, I insist that assertibles *exist*. And, reflecting on Cornford's phrase 'real thing', I cannot see what it would be for a thing *not* to be real. (Other than "not really to belong to the extension of a term that is in some way associated with it"—for example, "That's not a real duck, it's a decoy.") And if there are entities that are anetiological or non-causal, as I suppose that there are, "lightweight" seems to be a wholly appropriate qualification of a "platonism" that affirms their existence and the existence of no other non-particulars. By contrast, the Platonism of Plato is a heavyweight Platonism indeed.

It is because assertibles are without causal powers that their existence explains nothing. To be sure, reference to and quantification over, e.g., numbers is essential to many explanations of many things. But the indispensable function of this reference and quantification is to be found in the structure of the statements that constitute the explanations. The following passage from J. B. S. Haldane's classic 1928 essay "On Being the Right Size"[19] nicely illustrates the way numbers typically figure in explanations; it displays the way in which reference to and quantification over objects without causal powers can be essential to a causal explanation.

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[18] The label "lightweight platonism" was invented by my former student, Dr Kenny Boyce.

> [C]onsider a giant man sixty feet high—about the height of Giant Pope and Giant Pagan in the illustrated *Pilgrim's Progress* of my childhood. These monsters were not only ten times as high as Christian, but ten times as wide and ten times as thick, so that their total weight was a thousand times his, or about eighty to ninety tons. Unfortunately the cross sections of their bones were only a hundred times those of Christian, so that every square inch of giant bone had to support ten times the weight borne by a square inch of human bone. As the human thigh-bone breaks under about ten times the human weight, Pope and Pagan would have broken their thighs every time they took a step.

It seems, therefore, that, as I said in an essay called "A Theory of Properties,"[20] objects "fall into two exclusive and radically different categories." I don't like to think that. I really want objects to fall into *one* category (and one with membership criteria a little more demanding than "self-identical things" or "items that can be the referents of pronouns"). And, of course, I want that category to be one that I myself belong to. As far as I have been able to determine, however, these desires of mine cannot be satisfied. Or, to express myself more carefully, as far as I have been able to determine, I cannot *say* that all objects fall into one category—the category "substance"—without contradicting propositions of whose truth I am absolutely convinced.

The final sentence of this book will be its first sentence—its epigraph:

*Inimicus Plato, sed magis inimica falsitas.*

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[19] <https://archive.org/stream/OnBeingTheRightSize-J.B.S.Haldane/rightsize_djvu.txt>.

[20] In The remark is on p. 111.

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